From Social Friction to Social Meaning: What Expressive Uses of Code Tell Us About Free Speech

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This Article relates social friction to First Amendment theory and doctrine. The Article defines social friction as the cost of engaging in one expressive behavior rather than another, and of moving among different types of behavior. Social friction separates social contexts and practices from one another. By separating them, it partly defines and stabilizes them, so courts may use them to relate expressive conduct to free speech values. Because this relationship is central to free speech analysis, social friction is an important element of free speech analysis.

Cases involving the Internet distribution of software code exemplify the importance of social friction to free speech analysis. Because code is expressive, courts worry about the First Amendment. Because code does things, such as circumvent technological measures protecting content, they worry about its function. Because posting and distributing code is inexpensive, many people may use code in either a public or private manner, for various purposes, in very little time. Because consumption of code is non-rivalrous, it may be distributed widely among different contexts while remaining active in each of them, which means courts worry that distribution of code may cause significant and present harm even when it is simultaneously used in ways that advance First Amendment values.

For these reasons, courts have had trouble relating software code to free speech values. This Article suggests ways in which courts may distinguish uses of code that implicate free speech values from those that do not. In particular, it suggests that incitement doctrine be adapted to deal with cases in which free speech interests are at stake. The Article concludes with an appendix addressing objections to these recommendations.

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I. INTRODUCTION

This Article relates social friction to free speech doctrine. It does so by analyzing cases in which a party claims First Amendment protection for posting or otherwise distributing software code on the Internet. These cases provide an enlightening glimpse into the important role social friction plays in distinguishing and stabilizing the expressive practices and conventions on which free speech analysis rests.

By social friction I mean the costs of engaging in one expressive behavior rather than another, and of moving among different types of behavior. Social friction separates social contexts and practices from one another. By separating them, it partly defines and stabilizes them. Free speech doctrine rests in significant part on judicial understandings of the social meaning of expressive conduct. Social meaning is produced by persons engaging in social practices in social contexts. These practices and contexts allow us to identify conduct as expressive and to make sense of what is expressed. Social friction is therefore integral to expressive meaning, and thus to free speech analysis. Because social friction on the Internet is quite low, social contexts on the Internet may sometimes be unstable, which means social meanings are sometimes unstable, too. These facts have created three problems for judges.

First, in some cases, the relative instability of social contexts and practices on the Internet deprives judges of relatively stable social understandings they traditionally have used to make common-sense judgments about expressive practices in the physical world. For example, because code posted on the Internet can be copied and distributed cheaply and with great speed, it can move rapidly among very different social contexts while continuing to be used in each context at the same time. A student may study code in a classroom and e-mail it to an interested friend, who may use it to copy movies or music while the first student continues to work with the code in class.

Traditional speech cases present no such problems. Elements of social friction established stable and distinct contexts and practices, allowing courts to fashion distinct rules appropriate to each context. A protestor could speak in court or on the street, but not in each place at the same time. It took time to move physically from one context to the other, which is one example of social friction. The move was gradual and easily observed, which is one example of how social friction separates contexts and allows listeners and judges to relate context to content to identify social meaning, which then can be assessed in light of free speech values.

Second, persons who receive code on the Internet generally may employ it for many different purposes, each at trivial cost. Combined with the ease of distributing code widely among many different contexts, this fact implies that

protecting expression using code is a high-variance proposition. For those who favor a cost-benefit analysis, this may not mean much, as both benefits and costs will be high. For persons who are risk-averse, as I assume many judges are, this might weigh against protecting expressive practices that use code.

Third, the low cost of distributing code on the Internet brings to a general audience expressive practices and understandings previously limited to narrower communities of technical sophisticates. Cases involving code therefore present conflicts among the practices and understandings of different expressive communities. Because this conflict occurs within the mercurial social environment of the Internet, it is harder to manage than are similar conflicts in the friction-filled physical world.

In free speech cases involving code, courts must construct a vision of the social world to which their decisions will apply while taking into account how their decisions will shape the understandings and practices on which that world will, in part, be based. This is true to some degree in all cases, but because expressive practices on the Internet are more unsettled and changeable than in the physical world, decisions may shape the contexts on which they rest to a greater degree than is ordinarily the case.

Judges must evaluate ambiguous expressive practices in a way that advances First Amendment values to the greatest degree possible at a social cost society can tolerate. They have responded by attempting to transfer their understandings of expressive practices and contexts in the physical world to expression on the Internet, literally re-creating in cyberspace the social meanings on which free speech analysis in real space depends. This response reveals the importance of judicial understandings of social practices and social meanings—an aspect of judging that is present in all free speech cases, but which commonly works beneath the surface of analysis rather than being acknowledged explicitly.

Commentary on this issue to date has discussed the expressiveness of code and has identified a range of problems involving constitutional protection of code.[1] To demonstrate the expressive nature of code, source

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[1] *See* Robert C. Post, *Encryption Source Code and the First Amendment*, 15 BERKELEY TECH. L.J. 713 (2000) [hereinafter Post, *Code*]; Lee Tien, *Publishing Software as a Speech Act*, 15 BERKELEY TECH. L.J. 629 (2000). Other contributions to the debate over the constitutional status of code include Dan L. Burk, *Patenting Speech*, 79 TEX. L. REV. 99 (2000); Orin S. Kerr, *Are We Overprotecting Code? Thoughts on First-Generation Internet Law*, 57 WASH. & LEE L. REV. 1287, 1290–93 (2000); R. Polk Wagner, Note, *The Medium is the Mistake: The Law of Software for the First Amendment*, 51 STAN. L. REV. 387 (1999) (arguing for a more context-based approach to First Amendment protection of code); Ryan Christopher Fox, Comment, *Old Law and New Technology: The Problem of Computer Code and the First Amendment*, 49 UCLA

code and its potential for illustrating or proving points in academic discourse, is cited.[2] To demonstrate that the First Amendment cannot protect all code in all contexts, software viruses,[3] or a consumer purchasing binary distributions (presumably in some mass-market form) are cited.[4]

The most thoughtful contributions have argued that whether the First Amendment offers any protection to code depends on the context in which code is used.[5] They are right about that, and courts agree.[6] I take it as given that software code can be "covered" by the First Amendment, meaning it and its regulation can be relevant to the values the First Amendment advances. My goal is to move beyond a general statement about the expressiveness of code or the importance of social context, to explore the ways in which social context on the Internet differs from social context in physical space and how the differences affect existing understandings of First Amendment doctrines.

I offer three particular recommendations to aid in the development of doctrine in this area. First, courts generally should reject facial challenges to regulations that apply to a set of technologies including code, such as export

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L. REV. 871 (2002); Katherine A. Moerke, Note, *Free Speech to a Machine? Encryption Software Source Code Is Not Constitutionally Protected "Speech" Under the First Amendment*, 84 MINN. L. REV. 1007 (2000) (arguing that encryption source code is not protected speech but may be entitled to some protection insofar as it facilitates private communication).

In addition, several years ago Eugene Volokh recognized the relationship between the cost of expression and First Amendment doctrine. *See* Eugene Volokh, *Cheap Speech and What It Will Do*, 104 YALE. L.J. 1805 (1995). His article did not discuss the issues I focus on here, but his recognition that the costs of social interaction are relevant to social practices involving expression, and therefore to the First Amendment, was prescient.

[2] Tien, *supra* note 1, at 631–33 (discussion emphasizing, though not limited to, expressive aspects of source code, particularly when generally distributed).

[3] *Id.* at 669; Wagner, *supra* note 1, at 388 (discussing hypothetical hacking program).

[4] Post, *Code*, *supra* note 1, at 720; Tien, *supra* note 1, at 669.

[5] Post, *Code*, *supra* note 1, at 720; Tien, *supra* note 1, at 669; *see also* Wagner, *supra* note 1, at 392 (advocating contextual analysis rather than analysis based on types of code).

[6] Universal City Studios, Inc. v. Corley, 273 F.3d 429, 445–46 (2d Cir. 2001); Junger v. Daley, 209 F.3d 481, 485 (6th Cir. 2001) (using "protected" rather than "covered" but requiring additional analysis of validity of regulation); Bernstein v. United States Dep't of Justice, 176 F.3d 1132, 1141, *reh'g en banc granted and opinion withdrawn*, 192 F.3d 1308 (9th Cir. 1999) (*Bernstein IV*) ("encryption software, in its source code form and as employed by those in the field of cryptography, must be viewed as expressive for First Amendment purposes, and thus is entitled to the protections of the prior restraint doctrine"); Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 326–27 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001).

control regulations or the Digital Millennium Copyright Act. The mercurial nature of the practices involved makes it hard to say that such regulations are substantially overbroad. Worse, courts making categorical statements about code and the First Amendment will miss an opportunity to connect doctrine to particular practices and contexts on the Internet, and will find themselves backtracking on such statements in future cases. Sensible doctrine in this area requires a common-law approach, not a categorical one.

Second, courts should employ incitement doctrine to capture the way in which expressive practices on the Internet differ from such practices in the physical world. I suggest a modified version of the current incitement test and defend it against the quite legitimate charge that it probably will cost content producers a lot of money. Third, I discuss the problem of analyzing whether regulations of code can ever be or are always content-neutral, and caution against giving content-neutrality too much weight in evaluating laws regulating code.

Part I of this Article provides a brief explanation of how software code is expressive in a sense relevant to the First Amendment and discusses the importance of context to the analysis of expressive uses of code. Part II explores several aspects of contextual analysis of expression involving code, focusing in particular on the ways in which the lack of social friction on the Internet complicates analysis. Part III discusses my doctrinal recommendations. Following the conclusion, I add an appendix that considers and responds to objections to my approach.

II. THE IMPORTANCE OF SOCIAL CONTEXT AND SOCIAL MEANING

I will begin with a brief description of the expressiveness and expressive potential of code in the abstract, followed by a discussion of the contextual analysis necessary to relate the expressive aspects of code to First Amendment values.

A. *The Expressiveness and Expressive Potential of Code*

Source code refers to symbols software developers use to create instructions. These symbols differ among languages such as C, Fortran, Cobol, Perl, or Java, which employ grammatical and syntactical structures. Developers can understand and analyze source code as persons conversant with music can understand musical notation, or mathematicians can understand mathematical symbols.[7] Evidence at trial in *Universal City*

[7] For a summary of these points, see Brief of Amici Curiae in Supp. of Appellants and Reversal of the J. Below, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d

Studios v. Corley[8] established that competent programmers could translate properly specified English-language instructions into source code, and vice versa.[9] Programs are being developed to translate English-language instructions into source code, and the gap between conventional language and executable instructions is narrowing.[10]

Here are some examples of source code. The first two examples are in Visual BASIC.

```
If warning_message_type = "hurricane" Then
SendToAllEmployees("Warning: hurricane detected. Proceed to
storm shelter immediately!!!")
End If

If fldEmployeeName = "John Doe" Then
fldEmployeeSalary = fldEmployeeSalary + 100000
End If
```

[11]

The third example is in Perl.

```
my ($xor_len) = $key_length{$request} ;
my ($file_key) = substr($cipher_key, 0, $xor_len);
while (read(FILE, $xor_block, $xor_len)) {
$plain_text = $file_key ^ $xor_block;
$plain_text =~ s/+$//;
$plain_text =~ tr/A-Z/a-z/;
```

Cir. 2001) (No. 00-9185), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20010126_ny_progacad_amicus.html (last visited Oct. 10, 2003).

[8] 273 F.3d 429 (2d Cir. 2001). In the district court, the case was captioned Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294 (S.D.N.Y. 2000). Reimerdes and a co-defendant settled before the appeal. Universal City Studios, Inc. v. Corley, 273 F.3d 429, 440 n.8 (2d Cir. 2001).

[9] David S. Touretzky, *Source vs. Object Code: A False Dichotomy*, July 12, 2000 draft, *available at* http://www-2.cs.cmu.edu/~dst/DeCSS/object-code.txt (last visited Oct. 9, 2003); Gallery of CSS Descramblers, *at* http://www2.cs.cmu.edu/~dst/DeCSS/Gallery/ (last visited Oct. 9, 2003). The Touretzky essay was admitted in evidence at trial in *Corley*. Tr. at 1088–89 Ex. BBE, Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 346 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001) (No. 00-Civ-0277 (LAK)) [hereinafter *Reimerdes* Transcript], *available at* http://www.2600.com/dvd/docs/2000/0725-trans.txt (last visited Oct. 9, 2003) (Test. of David S. Touretzky, July 25, 2000).

[10] *Corley*, 273 F.3d at 448 n.22.

[11] Brief of Amici Curiae in Supp. of Appellants and Reversal of the J. Below at 8, *Corley*, 273 F.3d 429 (No. 00-9185), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20010126_ny_progacad_amicus.html (last visited Oct. 10, 2003).

```
print $plain_text,"";
}
}[12]
```

Every appellate court to consider the question has concluded that source code is a form of expression for purposes of the First Amendment.[13]

Object code refers to symbols produced by manipulating source code. A common form of manipulation is compilation, in which source code is translated into binary code. This translated code comprises a sequence of numbers hardware can execute.[14] Here is an example of object code, displayed in hexadecimal form, taken from an essay by Professor David S. Touretzky, which was admitted in evidence at trial in *Corley*.[15]

```
0000000 7f45 4c46 0102 0100 0000 0000 0000 0000
0000020 0001 0002 0000 0001 0000 0000 0000 0000
0000040 0000 0234 0000 0000 0034 0000 0000 0028
0000060 0008 0001 002e 7368 7374 7274 6162 002e
0000100 7465 7874 002e 726f 6461 7461 002e 7379
0000120 6d74 6162 002e 7374 7274 6162 002e 7265
0000140 6c61 2e74 6578 7400 2e63 6f6d 6d65 6e74
0000160 0000 0000 9de3 bf88 f027 a044 f227 a048
0000200 9010 2001 d027 bfe8 9010 2001 d027 bfec
```

Competent programmers can trace ideas expressed through English language, source code, assembly language, and object code.[16]

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[12] *Id.*

[13] *See Corley*, 273 F.3d at 445–47; Junger v. Daley, 209 F.3d 481, 485 (6th Cir. 2000); *Bernstein IV*, 176 F.3d at 1141.

[14] Compilation may take several steps. For example, at the *Corley* trial Professor Touretzky described steps in translation from C to RTL (a machine language), to the assembly language appropriate for the developer's processor, to binary machine code. *Reimerdes* Transcript, *supra* note 9 (Test. of David S. Touretzky, July 25, 2000). This fact means that source and object code are relative terms in the compilation process; the input from one step is the source code of that step and the output is the object code of that step and the source for the next one. *See* Touretzky, *supra* note 9.

[15] *Reimerdes* Transcript, *supra* note 9 (Test. of David S. Touretzky, July 25, 2000). Hexadecimal refers to a base-16 numbering system, which is convenient for expressing binary code, in which a byte is usually eight binary digits. Hexadecimal notation uses the numbers 0–9 and then the letters a–f. *See* http://whatis.techtarget.com/definition/0,,sid9_gci212247,00.html (last visited Oct. 10, 2003) (citation omitted).

[16] *Reimerdes* Transcript, *supra* note 9, at 1088–89 (Test. of David S. Touretzky, July 25, 2000); *see also* Tien, *supra* note 1, at 633 ("A computer program states or represents a procedure or algorithm in a programming language. The same algorithm could be

Some source code does not need to be compiled to be executed. Some languages, such as MATLAB, are normally implemented through interpreters, which execute the code without compiling it. Interpreters are available even for languages, such as C, which are usually implemented after compilation.[17] Other languages, such as Perl and Java, compile to byte code, a binary code not tied to the architecture of a particular processor.[18]

Source code therefore differs from object code, but the differences are neither total nor particularly stable. The district court in *Universal City Studios, Inc. v. Reimerdes*[19] correctly concluded that all forms of software are expressive to one degree or another, implying that the creation, distribution, and regulation of code are relevant to the First Amendment.[20] In terminology adopted by Lee Tien and Robert Post, the court found all forms of code to be "covered" by the First Amendment because regulation of code relates to First Amendment values.[21]

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written in a natural language like English or a programming language like C or LISP, but it remains the same algorithm." (citation omitted)).

[17] Touretzky, *supra* note 9, ¶ 3; Burk, *supra* note 1, at 117.

[18] Burk, *supra* note 1, at 117.

[19] 111 F. Supp. 2d 294 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001).

[20] Acknowledging Professor Touretzky's testimony as particularly helpful, the district court in *Corley* noted:

> It cannot seriously be argued that any form of computer code may be regulated without reference to First Amendment doctrine. The path from idea to human language to source code to object code is a continuum. As one moves from one to the other, the levels of precision and, arguably, abstraction increase, as does the level of training necessary to discern the idea from the expression. Not everyone can understand each of these forms. Only English speakers will understand English formulations. Principally those familiar with the particular programming language will understand the source code expression. And only a relatively small number of skilled programmers and computer scientists will understand the machine readable object code. But each form expresses the same idea, albeit in different ways.

Reimerdes, 111 F. Supp. 2d at 326. The court was right to say that any form of code may implicate First Amendment values, and therefore doctrine. That is why First Amendment protection should not turn solely on whether source code or object code is regulated. *But cf.* Steven E. Halpern, *Harmonizing the Convergence of Medium, Expression, and Functionality: A Study of the Speech Interest in Computer Software*, 14 HARV. J.L. & TECH. 139, 162 (2000) (arguing for different First Amendment approaches to source and object code).

[21] Post, *Code*, *supra* note 1, at 714; Tien, *supra* note 1, at 635. For an example of this distinction in the cases, see *City of Lakewood v. Plain Dealer Publ'g Co.*, 486 U.S. 750, 769 (1988) for a discussion distinguishing regulations implicating First Amendment analysis from those abridging speech:

This statement went a bit too far. Code that operates the anti-lock brake system on a car is presumptively not "covered" by the First Amendment because, absent additional and unusual facts, neither the code nor the device in which it is embedded are part of expressive practices related to First Amendment values. Code that either is used for expressive purposes or as an input to expressive practices may be either covered or protected by the First Amendment.[22] A speaker's choice to use source rather than object code may be relevant to determining whether the speaker's use of code is protected by the First Amendment, but even in such cases the difference between source and object code will be one fact relevant to the decision, not the sole basis for decision.[23]

B. *Social Practices, Social Context, and Social Meaning*

Expression is produced through social understandings speakers and listeners bring to bear on conduct they recognize as expressive.[24] A speaker conveys a message to a listener by signaling to the listener the speaker's intention to convey that message.[25] The signal succeeds through the speaker's employment of conventions generally understood as expressive.[26]

For expression to work, both speakers and listeners must understand the

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[22] Coverage does not imply constitutional protection, however. Coverage implies only that such regulations have to be analyzed in context and with reference to the values the constitutional protection of speech and press embody and the doctrines courts have created to advance those values. Post, *Code*, *supra* note 1, at 714; Tien, *supra* note 1, at 668.

[23] *See* United States v. Elcom Ltd., 203 F. Supp. 2d 1111, 1126 (N.D. Cal. 2002) (discussing the difference between source and object code).

[24] *See* J.L. AUSTIN, HOW TO DO THINGS WITH WORDS (2d ed. 1962); STANLEY FISH, THERE'S NO SUCH THING AS FREE SPEECH, AND IT'S A GOOD THING, TOO 108–09, 114–17 (1994); KENT GREENAWALT, SPEECH, CRIME, AND THE USES OF LANGUAGE 40–43 (1989) (discussing boundaries of free speech jurisprudence); ROBERT C. POST, CONSTITUTIONAL DOMAINS 250–57 (1995) [hereinafter CONSTITUTIONAL DOMAINS]; FREDERICK SCHAUER, FREE SPEECH: A PHILOSOPHICAL ENQUIRY 10–11 (1982) (classifying speech as an "other-regarding" activity); JOHN R. SEARLE, SPEECH ACTS 43–45 (1969); LUDWIG WITTGENSTEIN, PHILOSOPHICAL INVESTIGATIONS, 11e (G.E.M. Anscombe trans., 3d ed. 1958) ("[T]he *speaking* of a language is part of an activity, or of a form of life."))

[25] In this Article I use the terms "speaker" and "listener" generically, referring to persons intending to express things and persons at whom expressive behavior is directed.

[26] SEARLE, *supra* note 24, at 43 ("In speaking I attempt to communicate certain things to my hearer by getting him to recognize my intention to communicate just those things. I achieve the intended effect on the hearer by getting him to recognize my intention to achieve that effect.").

practices and conventions they employ as expressive. A person walking to work is not speaking, but a parade marcher is.[27] Burning a draft card conveys a political message,[28] but only to those who know it is a draft card that is being burned and that draft cards relate to some message a person might want to express. Burning a blank piece of paper generally says nothing, no matter how much the "speaker" means it to say, nor does reckless driving by a frustrated commuter or other manifestations of a psychological state that do not invoke conventions socially understood as expressive.[29]

The context in which expression occurs is an unspoken element of the dialogue between speakers and listeners. It helps each ascertain what the other intends to be doing. For example, context may create expressive force from acts not ordinarily recognized as expressive. When it is widely known that a fanatic used a Ryder truck to attack a federal building, and that abortion clinics and doctors are subject to harassment and sometimes violence, parking a Ryder truck in the driveway of an abortion clinic may send an intimidating message.[30]

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[27] *See* Hurley v. Irish-American Gay, Lesbian and Bisexual Group of Boston, Inc., 515 U.S. 557, 581 (1995) (holding that a parade is protected expression and parade organizers therefore have First Amendment right against compelled speech allowing them to exclude unwanted marchers).

[28] *See generally* United States v. O'Brien, 391 U.S. 367 (1968). As this example shows, that a practice is expressive does not imply that the Constitution protects it from all or even most regulation.

[29] Robert Post refers to such conventions as constituting a "medium" of expression, which he defines as "a set of social conventions and practices shared by speakers and audience." Robert C. Post, *Recuperating First Amendment Doctrine*, 47 STAN. L. REV. 1249, 1253 (1995) [hereinafter Post, *Recuperating*]. *See also* SEARLE, *supra* note 24, at 45 ("In our analysis of illocutionary acts, we must capture both the intentional and the conventional aspects and especially the relationship between them.").

This fact does not mean that speech is protected only if understood by particular speakers. It does mean that for First Amendment values to be in play the acts at issue must invoke practices and conventions generally understood as expressive. One may or may not understand the diatribes on speakers' corner, French cinema, Heidegger, Finnegan's Wake or *Pennoyer v. Neff*. But one at least understands that the actions in each case employ expressive conventions in a way that creates the possibility of communication. By employing those conventions, speakers signal an intention to advance ideas that could be understood and considered as a general matter. Audience members may recognize expressive practices as evincing an intention to engage in deliberation, even if particular members of the audience (or the speaker, for that matter) have no idea what the expression means. The intentions of speaker and listener play off one another and, within general understandings of social practices and conventions, "generate forms of human interaction that are acknowledged as 'ideas' within the jurisprudence of the First Amendment." Post, *Recuperating*, at 1254.

[30] United States v. Hart, 212 F.3d 1067, 1071–72 (8th Cir. 2000). To add to the

Social context also allows speakers and listeners to discriminate among the functions performed by acts they recognize as expressive. A lawyer giving a graduation address at a law school is not practicing law, but one speaking in an office to an individual about a possible case is.[31] A person mailing a recipe for cooking drugs to one who has ordered and paid for it is aiding and abetting a crime; a person in a movie demonstrating how to cook drugs is not.[32] Two persons standing before a minister saying "I do" may be getting married, performing in a play or, if they are both men or both women, engaging in social protest.[33]

Because context is so important, courts cannot decide cases by trying to classify code abstractly. Say the analogue to the C programming language is English, which is a form of expression for constitutional purposes, too. It would be absurd to say that the Constitution prohibits regulation of English because English is expressive.[34] Sexual demands from a supervisor to a subordinate, contracts, prospectuses, bid-rigging, product warning labels, and the advice of doctors and lawyers are all examples of expression occurring in English. Regulation of English in these contexts is not unconstitutional just because it is regulation of expression.[35]

The manner in which persons relate to expressive behavior is also important in relating that behavior to First Amendment values. Professor Post has pointed to conventions embodying a "dialogic and independent" relationship between speakers and listeners as advancing First Amendment values.[36] Such conventions signal to listeners that they are to deliberate about and engage expression rather than relying on it, as with legal advice, a list of

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point, if one knew the clinic was in the process of moving, the presence of the trucks might well seem innocuous. *Id.* at 1070.

[31] *See, e.g.*, Togstad v. Vesely, Otto, Miller & Keefe, 291 N.W.2d 686 (Minn. 1980) (affirming malpractice verdict against lawyer based on comment in initial interview with person who did not formally retain lawyer).

[32] *See* United States v. Barnett, 667 F.2d 835 (9th Cir. 1982) (holding First Amendment was no defense against aiding and abetting indictment based on mail-order sale of instructions on manufacturing drugs).

[33] *See* AUSTIN, *supra* note 24, at 5 (noting role of context in marriage example).

[34] As Kent Greenawalt has put it, "any assumption that all communications are covered by a principle of free speech would be ludicrous." GREENAWALT, *supra* note 24, at 42.

[35] Nor does the First Amendment impose particular liability rules in such cases, in contrast to the actual malice requirement of defamation law, for example. New York Times Co. v. Sullivan, 376 U.S. 254, 270 (1964); *see also* Hustler Magazine, Inc. v. Falwell, 485 U.S. 46, 56 (1988) (requiring proof of false statement of fact and malice in emotional distress case based on publication ridiculing public figure).

[36] Post, *Recuperating*, *supra* note 29, at 1254.

ingredients, or some uses of code.[37]

Detailed analysis of expressive practices and understandings cannot decide cases, however. Decisions in actual cases have to be based on the values and concerns—themselves subject to debate and modification—embodied in the First Amendment. The values include such things as democratic self-governance, development of personal attitudes and understanding, mediation between individual and social aspects of personality, development and refinement of ideas and opinions, pursuit of the truth, and so on. The concerns include such things as governmental entrenchment—perhaps tyranny—through suppression of dissent, a suspicion of centralized over individual formation of opinion, and the perpetuation of error through enforced orthodoxy.[38]

Two cases illustrate how these points apply to First Amendment defenses to the regulation of code. The first is *Commodities Future Trading Comm'n v. Vartuli*.[39] The Second Circuit there dealt with a currency futures trading program. The program instructions told users to feed market prices into the program, which would generate "buy" and "sell" recommendations based on these data.[40]

The program was touted as a trading instrument that could make money. Consumers were invited to rely on it as an investing tool, not to engage it as a tool for mastering finance or understanding general market conditions.[41] The court rightly rejected the vendor's claim that the First Amendment shielded it from liability, saying that because the program was marketed as an investing tool to be relied upon rather than a tool for engaging in deliberation, and because that is how it functioned, the program was not protected speech.[42]

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[37] *Id.* On legal advice, see *Togstad*, 291 N.W.2d at 693. On ingredients, see Livingston v. Marie Callenders, Inc., 72 Cal. App. 4th 830, 840 (1999) (holding plaintiff entitled to trial on strict liability theory based on alleged failure to warn of presence of MSG).

[38] This is obviously an extremely brief summary. For more general though succinct discussions, see generally Kent Greenawalt, *Free Speech Justifications*, 89 COLUM. L. REV. 119 (1989); Geoffrey R. Stone, *Content-Neutral Restrictions*, 54 U. CHI. L. REV. 46, 54–55 (1987).

[39] 228 F.3d 94, 111–12 (2d Cir. 2000).

[40] *Id.* at 98–99.

[41] *Id.* at 111.

[42] *Id.* The court's analysis is worth quoting here:

> The language at issue here was to be used in an entirely mechanical way, as though it were an audible command to a machine to start or to stop. "[T]he point . . . [was] not to convey information or to assert values." [citation omitted] It was to induce action without the intercession of the mind or the will of the recipient. None of the reasons for which speech is thought to require

Similarly, the district court in *United States v. Elcom, Ltd. & Dmitry Sklyarov* rejected a free speech defense to a criminal prosecution for trafficking in object code distributed in a commercial setting and presented as a product to be used to decrypt other code, rather than as a subject of deliberation.[43] Sklyarov's case had to do with decryption of eBook files that could be read using Adobe's eBook Reader.[44] The indictment charged that Sklyarov and others wrote, and Elcom sold, a program called Advanced

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> protection above and beyond that accorded to non-speech behavior . . . is implicated by the communications here in issue, and none counsels in favor of treating the Recurrence communications at issue as protected "speech." From a First Amendment perspective, Recurrence, as sold, did not materially differ from a system in which Recurrence's signals electronically triggered trades. In other words, the fact that the system used words as triggers and a human being as a conduit, rather than programming commands as triggers and semiconductors as a conduit, appears to us to be irrelevant for purposes of this analysis.

Id. (citation omitted).

[43] United States of America v. Elcom Ltd., 203 F. Supp. 2d 1111 (N.D. Cal. 2002). The indictment was brought under § 1201(b)(1) and § 1204 of the Digital Millennium Copyright Act. *See* 17 U.S.C. §§ 1201(b)(1), 1204 (2002). The first of these sections makes it illegal to offer to the public or traffic in technology primarily designed to circumvent a technological measure that effectively protects a right of a copyright holder. This prohibition extends to technologies that have limited commercially significant purposes other than circumvention, or which are marketed for use as circumvention tools. Under § 1204(a)(1), any person violating § 1201 "willfully and for purposes of commercial advantage or private financial gain" is guilty of a crime. The statute defines "circumvent" to mean "to descramble a scrambled work, to decrypt an encrypted work, or otherwise to avoid, bypass, remove, deactivate, or impair a technological measure, without the authority of the copyright owner." § 1201(a)(3)(A). The statute also creates a private right of action, which does not require a plaintiff to show that a violation was for commercial advantage or private gain. *Id.* § 1203. Sklyarov and the government entered into a diversion agreement deferring charges against him, which effectively ended his personal risk. The case against Elcom continued. The district court denied a motion to dismiss the indictment, *Elcom*, 203 F. Supp. 2d at 1142, and Elcom was later acquitted at trial. *See* Lisa Bowman, *ElcomSoft Verdict: Not Guilty*, CnetNews.com, *at* http://news.com.com/2100-1023-978176.html (Dec. 17, 2002).

[44] The Reader was a program available at no cost from Adobe, which consumers could use to read books stored in electronic form. As relevant to the DMCA, the reader was a digital rights management device. It could allow users to do various things with texts, such as printing them, lending them, copying them, or giving them away. It also could allow publishers to limit these functions with respect to a particular text, thus limiting the things purchasers could do with their books. Publishers could do this by encrypting eBook files in a way that would activate only some of the Reader's functions. *Elcom*, 203 F. Supp. 2d at 1117–18.

eBook Processor (AEBPR),[45] which the indictment alleged had as its "primary purpose" to "remove any . . . limitations on an ebook purchaser's ability to copy, distribute, print, have the text read audibly by a computer, or any other limitation imposted by the publisher or distributor of an ebook . . . ."[46]

In his diversion agreement, Sklyarov admitted the main points in this story.[47] He also said he wrote his part of AEBPR in connection with work on his dissertation as well as with his work for Elcom.[48] His dissertation work convinced him that many electronic publishing programs were not secure,[49] and he wanted to alert the public to this poor security. After considering and rejecting various methods,[50] Sklyarov and Elcom decided to release a

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[45] Indictment ¶ 2, *Elcom*, 203 F. Supp. 2d 1111, (No. CR-01-20138 (RMW)), *at* http://www.eff.org/IP/DMCA/US_v_Elcomsoft/20010828_sklyarov_elcomsoft_indictment.pdf (last visited Oct. 10, 2003).

[46] *Id.* AEBPR apparently only worked if a consumer had at least one authorized copy of an eBook. AEBPR would strip the encryption from that file, allowing the eBook file to be displayed and manipulated on Adobe's Acrobat reader. O'Connell Aff. ¶ 6, *Elcom*, 203 F. Supp. 2d 1111 (No. CR-01-20138 (RMW)), *at* http://www.eff.org/IP/DMCA/US_v_Elcomsoft/20010707_complaint.html (last visited Oct. 10, 2003). Distribution of AEBPR was analogous to distribution in *Vartuli*. *Id.* ¶¶ 3, 8(c). Elcom posted executable (binary) AEBPR code for sale on its web site. Consumers could download from the site a partially effective copy of AEBPR, which would allow them to read about 10% of an ebook. *Id.* ¶ 8(c). If a consumer liked the program, she could send $99 to a payment service, after which Elcom would send her an e-mail with a registration key that would enable AEBPR to decrypt whole books. *Id.* ¶ 8(c).

The indictment does not actually specify that AEBPR object code was posted. That fact may be inferred from the Diversion Agreement, which mentions only the posting of the program without any reference to source code and mentions Elcomsoft's intention to charge a fee for the code, an intention that fits poorly with the distribution of source code. *See* Diversion Agreement ¶ 2(E), *Elcom*, 203 F. Supp. 2d 1111 (No. CR-01-20138 (RMW)), *at* http://www.eff.org/IP/DMCA/US_v_Elcomsoft/20011213_sklyarov_agreement.pdf (last visited Oct. 10, 2003) [hereinafter Diversion Agreement]. I have confirmed the point with Sklyarov's counsel.

[47] He acknowledged that "[t]he only use of the AEBPR is to create an unprotected copy of an electronic document. Once a PDF file is decrypted with the AEBPR, a copy is no longer protected by encryption. That is all the AEBPR program does." Diversion Agreement, *supra* note 46, ¶ 2(c). This admission established the main elements of a violation of § 1201(b)(1)(A).

[48] The agreement says Sklyarov "developed AEBPR as a practical application of my research for my dissertation and in order to demonstrate weaknesses in protection methods of PDF files." Diversion Agreement, *supra* note 46, ¶ 2(c).

[49] *Id.*

[50] He considered simply making all his information public, but thought that would only harm publishers, who were not really responsible for software developers' shoddy

demonstration program "which could be converted to the fully functional version by paying some amount of money."[51] They set the price at $99; Sklyarov thought that price was too much higher than the average eBook to result in widespread piracy, but would catch the attention of electronic publishers.[52] On the latter point, at least, he was right.

Sklyarov moved to dismiss the indictment on the ground that the First Amendment protected his writing and publication of AEBPR. The motion treated code abstractly, arguing that code is expressive and therefore protected by the First Amendment. It also argued that AEBPR could be used for lawful purposes and stressed that its use was up to consumers, not Sklyarov. Doctrinally, Sklyarov argued that he could not be charged unless AEBPR met the First Amendment standards for incitement which, he claimed, it did not.[53]

The district court rightly rejected Sklyarov's arguments. Encumbered by the baroque doctrinal apparatus of free speech, however,[54] it did so in a needlessly indirect way. The court's first premise was that "First Amendment scrutiny is triggered because the [DMCA] bans the sale of something that at some level contains protected expression."[55] The second premise was that code is "expression that is protected by the copyright laws and is therefore 'speech' at some level, speech that is protected at some level by the First

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work. *Id.* at Exh. A, 1. He considered releasing a partially functioning demonstration program, but thought this would not get the attention of e-publishing firms, which "do not take in consideration any unwanted fact, until that fact becomes really threatening." *Id.* The parallel to Judge Jackson's statement in the Microsoft trial that to get a mule's attention it is useful to club it with a stick is irresistible. *See* United States v. Microsoft Corp., 253 F.3d 34, 111 (D.C. Cir. 2001).

[51] Diversion Agreement, *supra* note 46, at Exh. A, 1.

[52] *Id.*

[53] Mem. of P. & A. in Supp. of Mot. to Dismiss Based on First Amendment at 1, 8, United States v. Elcom Ltd., 203 F. Supp. 2d 1111 (N.D. Cal. 2002) (No. CR-01-20138 (RMW)) (copy on file with author). I should disclose here that I discussed Sklyarov's arguments on an informal (non-retained) basis with his counsel, who is a friend. The government responded with an array of arguments, including the baffling claim that AEBPR was commercial speech, a position that actually gave the defendants more credit under the First Amendment than they were due. The government's main point, though, was that the DMCA is indifferent to expression and that Sklyarov was indicted because of what AEBPR did, not what it said. United States' Opp'n to Defs.' Mot. to Dismiss the Indictment on Constitutional Grounds at 18–21, *Elcom*, 203 F. Supp. 2d (No. CR-01-20138 (RMW)) (copy on file with author). Sklyarov's presentation at the conference was protected speech. He was not indicted for the presentation, however. He was indicted for trafficking in AEBPR.

[54] *See* Post, *Recuperating*, *supra* note 29, at 1250, 1253–54, 1270–72.

[55] *Elcom*, 203 F. Supp. 2d at 1126.

Amendment."[56] Saying that something is "speech" at some level does not mean it is protected by the First Amendment, of course. The court was simply wrong about that,[57] and the reference to copyright does nothing to help the analysis.

The court got to the right result, however, by concluding that Congress was worried about the function of decryption devices rather than the ideas they expressed. It therefore held that the DMCA is a content-neutral regulation of expression.[58] Applying "intermediate scrutiny," the court found the "DMCA does not burden substantially more speech than is necessary to achieve the government's asserted goals of promoting electronic commerce, protecting copyrights, and preventing electronic piracy."[59]

Though its result was right, the court's reasoning with respect to Sklyarov's conduct was wrong. Even accepting Sklyarov's claim that he intended the price and marketing of AEBPR to send a message to eBook producers, his prosecution raised no significant First Amendment worries. Even if we accept at face value the idea that Skylarov intended the sale of AEBPR to make a statement, his case is an example of expression that fails to convey the intended message because it does not employ social practices and conventions generally understood as expressive.[60] Mass-market distribution of code presented as a tool for decrypting an eBook rather than

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[56] *Id.*

[57] *See supra* text accompanying notes 30–33.

[58] *See supra* text accompanying notes 30–33.

[59] *Elcom*, 203 F. Supp. 2d at 1132.

[60] *See supra* text accompanying note 24. In other words, it does not matter that Sklyarov thought he was sending a message to Adobe by releasing a partly functional version of AEBPR to show that it worked, combined with what he thought was the relatively high price for the complete program. A speaker's unilateral intention to send a message does not warrant constitutional protection unless it employs social practices and conventions that enable the message to be understood and treated in ways that advance First Amendment values.

It is worth noting that it would be very hard to extend First Amendment protection to binary code marketed as a tool for purposes other than deliberation without confounding many consumer expectations. For example, would implied warranties of merchantability be unlawful under such a regime? Would plaintiffs suing software manufacturers for defects face heightened standards of proof in order to give those manufacturers the "breathing space" secured by decisions such as *New York Times v. Sullivan*? *See* New York Times v. Sullivan, 376 U.S. 254, 272 (1954). Such results would make no sense, because code distributed under such circumstances does not contribute to the "uninhibited, robust, and wide-open debate" that such rules are designed to protect, nor do they justify the cost imposed on plaintiffs who may be harmed by expression but cannot meet the heightened burden of proof. *See id.* at 270; Frederick Schauer, *Uncoupling Free Speech*, 92 COLUM. L. REV. 1321, 1326–28 (1992).

as a subject for deliberation,[61] is not, at this time at least, socially recognizable as an expressive practice.[62]

It follows that Sklyarov was wrong to suggest that the court follow First Amendment incitement standards, which apply to situations in which expression would be protected but for the risk of incitement,[63] and which therefore did not apply to Sklyarov's case. Similarly, the court's intermediate scrutiny analysis was superfluous. Precisely because Sklyarov's conduct did not employ practices and conventions recognized as expressive, it was essentially a foregone conclusion that the court would see nothing in his case to suggest that the DMCA burdened more speech than was necessary to achieve its goals.

The only real speech-like issue in the case had to do with fair use interests of persons who might use AEBPR to decrypt content. Not surprisingly, that is the aspect of the case to which the court devoted most attention. In that aspect of the case, however, AEBPR was simply an input to facilitate uses of other content—the books themselves—which employed well-recognized expressive conventions.

As these examples show, categorical approaches to the constitutional protection of code are misleading to the extent they try to transcend social context. As with English, the First Amendment governs the regulation of code by analyzing a complex mixture of the social context and function of practices that well-socialized persons understand as expressive, the aims of

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[61] Interestingly, 17 U.S.C. § 1201(b)(1)(C) prohibits trafficking in technology "marketed . . . for use in circumventing protection afforded by a technological measure that effectively protects a right of a copyright owner under [the Copyright Act]." This provision focuses on the manner in which a speaker's presentation of expression orients a listener to that expression, and therefore identifies one element relevant to classifying expression relative to First Amendment values. *Id.*

[62] *See* CFTC v. Vartuli, 228 F.3d 94, 111–12 (2d Cir. 2000) (rejecting free speech challenge to enforcement of regulations against trading program); Post, *Code*, *supra* note 1, at 720 (arguing that regulation of mass-market, binary distributions of code "appears, on its face, no different than the regulation of hardware in computers"); Mark A. Lemley & Eugene Volokh, *Freedom of Speech and Injunctions in Intellectual Property Cases*, 48 DUKE L.J. 147, 236–37 (1998) ("[M]ost executable software is best treated as a virtual machine rather than as protected expression."). Lemley and Volokh focus on software as such, rather than on the context of its presentation. *Id.* at 150 n.5 ("Our argument doesn't cover copyrighted software, which (at least in object code form) probably doesn't qualify as speech for First Amendment purposes."); *id.* at 210 ("Reproduction and distribution of computer object code, for instance, could be preliminarily enjoined with no First Amendment difficulty."). Their conclusions therefore need to be stated a bit more precisely, though as I read their work it does not disagree with the contextual analysis I offer here.

[63] *See* discussion *infra* Part III.B.

the regulation, and the values the First Amendment advances.[64]

C. *The Functionality Argument Refuted*

Some judges and commentators have eschewed contextual analysis and instead argued that code is too functional to be treated as "pure" expression. This section explains why that approach is mistaken.

The functionality argument begins by noting that the expressive aspect of code cannot be separated from its function. Code is text, in other words, but it is text as machine rather than text as a subject for human deliberation.[65] The argument then asserts that interactions between persons and code are so slight that the expressive aspect of code is overwhelmed by the functional. These points imply that the First Amendment should not shield code from regulation.

Both the district court and the Second Circuit in *Corley* advanced a form

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[64] Lee Tien is therefore quite right to say that "the ontological status of software should not determine whether the First Amendment covers software. What matters is how software is used in an act." Tien, *supra* note 1, at 691; *see also id.* at 695 ("[T]he inquiry should focus on software acts, not software."); Wagner, *supra* note 1, at 408 ("In the context of computer software, focusing on the medium would be the mistake."). And Professor Post is right to say that "[t]o know whether encryption source code forms part of a dialogue between humans or instead serves as instructions to computers, we must know more than that it is written in electronic form; we must also know the social circumstances of its sale and application." Post, *Code*, *supra* note 1, at 720. Professor Kerr has made this point as well. *See* Kerr, *supra* note 1, at 1293.

[65] My colleague Dan Burk puts the point well, saying that "software is not a text, it is a machine *built* of text," and that, unlike instruction manuals or recipes, even "source code instructions do not inform humans how to carry out a process. Instead, source code instructions command the arrangement of voltages in computational registers, a process which humans typically do not follow." Burk, *supra* note 1, at 118–21. Though "source code may be read by a human, who may understand what process it entails . . . the code remains abstract machinery—it will be executed by the machine automatically and involuntarily . . . ." *Id.* at 119. In brief, "instructions to a human merely describe how to perform a task whereas software instructions actually are a part of the machine that executes the task." *Id.*

Professor Burk advances this argument in the context of analyzing the implications for intellectual property law of treating code as speech. *Id.* at 102. He does not claim to resolve the constitutional questions involved, and his comments should be read in this light. *Id.* Nevertheless, his is a powerful and succinct statement of the view that code should be regarded as primarily functional, and I therefore rely on it here. For a more detailed discussion of the functionality point, see Pamela Samuelson et al., *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2310, 2320–24 (1994). This Article deals with the question whether code should be subject to copyright or given its own statute; it does not argue that the functionality of code should limit the constitutional protection of code. *See id.*

of this argument. *Corley* was a suit under Section 1201(a)(2) of the DMCA,[66] brought by motion picture producers against a self-styled journalist who posted code called DeCSS on a website affiliated with his magazine. DeCSS is a program written for the most part by Jon Johansen, a hacker in Norway who was 17 years old at the time. CSS stands for "Content Scramble System," which is software used to encrypt DVDs.[67] DeCSS stands for "decrypt CSS."[68] As the name suggests, at the time of trial that program allowed a user to decrypt a DVD encrypted with CSS and to copy a decrypted version of that DVD to the user's hard drive.[69]

As noted above, Judge Kaplan rightly recognized that code is expressive.[70] He also thought the functional aspects of code were different from those of ordinary speech, however, analogizing regulation of DeCSS to the regulation of burglar tools.[71] He used this difference to classify the DMCA's regulation of code as content-neutral.[72] The Second Circuit distinguished code from plain-text instructions along the same lines, saying:

> Unlike a blueprint or a recipe, which cannot yield any functional result without human comprehension of its content, human decision-making, and human action, computer code can *instantly* cause a computer to accomplish tasks and *instantly* render the results of those tasks available throughout the world via the Internet. The only human action required to achieve these results can be as limited and *instantaneous* as a single click of a mouse. These realities of what code is and what its normal functions are require a First Amendment analysis that treats code as combining nonspeech and

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[66] This section is substantially similar to 17 U.S.C. § 1201(b)(1), under which Sklyarov was indicted, except that § 1201(a)(2) applies to technology that circumvents measures protecting access to a work rather than measures protecting the rights of a rights-holder.

[67] Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 308 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001).

[68] *Id.* at 311 n.72.

[69] *Id.* at 311.

[70] *Id.* at 328.

[71] *Id.* at 329.

[72] *Id.* at 329. In Judge Kaplan's words:

> [t]he computer code at issue in this case . . . does more than express the programmers' concepts. . . . DeCSS, like any other computer program, is a series of instructions that causes a computer to perform a particular sequence of tasks which, in the aggregate, decrypt CSS-protected files. Thus, it has a distinctly functional, non-speech aspect in addition to reflecting the thoughts of the programmers.

Id. at 328–29.

speech elements, *i.e.*, functional and expressive elements.[73]

The Second Circuit later added that DeCSS, "[i]n its basic function, . . . is like a skeleton key that can open a locked door, a combination that can open a safe, or a device that can neutralize the security device attached to a store's products."[74]

Emphasizing the functional aspects of code to this extent exaggerates the difference between code and conventional expression and impedes cogent analysis. There are four reasons this is so. First, because the argument focuses on code in the abstract rather than code in particular social contexts, it provides no way to relate particular uses of code to First Amendment values.[75] It is as if one offered a theory of how to regulate the phrase "shoot the President." Said by one conspirator to another who was pointing a gun, the words could be the basis for criminal liability without the slightest constitutional interference. Said by a character in a movie or play, the words are entitled to the full protection of the First Amendment.[76]

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[73] Universal City Studios, Inc. v. Corley, 273 F.3d 429, 451 (2d Cir. 2001) (emphasis added).

[74] *Id.* at 453. *See also* Bernstein v. United States Dep't of Justice, 176 F.3d 1132, 1147 (9th Cir. 1999), *reh'g en banc granted and opinion withdrawn* 192 F.3d 1308 (9th Cir. 1999) (*Bernstein IV*) (T.G. Nelson, J., dissenting) ("The basic error which sets the majority and the district court adrift is the failure to fully recognize that the basic function of encryption source code is to act as a method of controlling computers.").

[75] It is worth noting that the Second Circuit referred to the "basic" use of the code at issue; it did not refer to the way the defendant had used the code. *Corley*, 273 F.3d at 452–53. As we will see, this abstract focus significantly weakened the court's analysis.

[76] *Cf.* Watts v. United States, 394 U.S. 705 (1969). In that case, the Supreme Court held the trial court erred in not granting a motion for judgment of acquittal, *id.* at 707, in a trial in which the accused was indicted under a statute making it unlawful for anyone "knowingly and willfully" to make "any threat to take the life of or to inflict bodily harm upon the President of the United States . . . ." *Id. at* 705 (quoting 18 U.S.C. § 871(a) (1917)). The defendant was an eighteen-year-old black man who attended a public rally near the Washington monument. The crowd broke into small groups, and a member of the defendant's group stated that the protestors should educate themselves before protesting. *Id.* at 706. In response, the defendant replied in part by noting that he had been drafted and was due to report the following Monday; that he would not report, and that "[i]f they ever [made him] carry a rifle the first man [he wanted] to get in [his] sights is L.B.J." *Id.* For the Court, the issue was that "[w]hat is a threat must be distinguished from what is constitutionally protected speech." *Id.* at 707. The Court thought the social context was strong enough to establish, as a matter of law, that no threat had been made:

> We agree with petitioner that his only offense here was "a kind of very crude offensive method of stating a political opposition to the President." Taken in context, and regarding the expressly conditional nature of the statement and the reaction of the listeners, we do not see how it could be interpreted otherwise.

Second, even if one views code as a machine, it does not follow that code cannot be protected speech. Depending on the manner and context in which it is used and the nature of the regulation at issue, a machine might be protected from regulation either as part of the content of expression—as in a museum exhibition—or as an input to expression, as with a printing press or newsprint. No sane judge would analyze a ban on computer printers or word processing software without considering how such a ban would affect First Amendment values.[77] Conversely, machines may form the content of expression that may be regulated as threats,[78] as with the Ryder trucks Fred Hart left at two abortion clinics.[79] Even if code is a machine, it may enjoy constitutional protection when it is used in a way that advances First Amendment values or is regulated in a way or for reasons that encroach on those values.[80]

Third, all expression is functional. Social life and social institutions are organized through expression, which is itself bound up in social conventions and practices that give it meaning to speakers and audiences.[81] To express

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Id. at 708.

[77] *See* Post, *Code*, *supra* note 1, at 717, 720.

[78] United States v. Hart, 212 F.3d 1067, 1074 (8th Cir. 2000).

[79] *Id.* at 1069–70.

[80] This point applies to both high- and low-level code. The *Elcom* court noted some disagreement on whether the form of code matters for free speech purposes, 203 F. Supp. 2d at 1126, but it rightly concluded that the difference is not significant in and of itself. *See id.* As the cases discussed below demonstrate, various forms of code, including both source and object code, may be used in ways that advance First Amendment values. When that happens, that use of code should enjoy First Amendment protection, which generally, though not always, implies that its use may not be suppressed or penalized. The distinction between source and object code may or may not be relevant to constitutional protection, depending on the circumstances in which the code is presented. The main point of relevance is that because source code is easier to understand, the use of source code might in some cases be evidence that a speaker intended to engage in dialogue and that a listener interpreted the code that way. In that case, speakers and listeners would use knowledge of the range of possible formats for presenting code to make sense of the code at hand. To say that the form of the code might be relevant is not, of course, to say it would be decisive.

[81] *See* FISH, *supra* note 24, at 106–16; Post, *Code*, *supra* note 1, at 715; Robert C. Post, *Reconciling Theory and Doctrine in First Amendment Jurisprudence*, 88 CAL. L. REV. 2353, 2366 (2000) [hereinafter Post, *Reconciling*] ("Society consists of myriad forms of social practices, and speech is constitutive of almost all of these practices."); WITTGENSTEIN, *supra* note 24. In taking this view, I qualify as a skeptic on the distinction Professor Greenawalt advances between what he calls "situation-altering utterances" and statements of fact and value. GREENAWALT, *supra* note 24, at 60–62. His analysis does not require a strict division between situation-altering utterances and other speech,

something is to invoke conventions, to engage in practices that relate to various social ends, and to move to achieve the ends to which the practice relates.[82] Stump speeches constitute electioneering and self-governance; thank-you notes constitute polite behavior, as do little white lies about the appearance of a friend and compliments on the host's cooking. A politician's (protected) promise solicits votes; a personal (unprotected) avowal of love solicits romance;[83] an (unprotected) true threat intimidates and causes fear;[84] a (protected) museum exhibition of photographs by Robert Mapplethorpe challenges conventional morality and argues about the harms from social rejection of homosexual relationships. To emphasize the functional aspect of code is therefore to emphasize a constant, which makes it impossible to draw the distinctions necessary to decide cases.

Fourth, even if none of these points were true, the degree of effort needed to turn "expression" into "action"—so important to the courts in *Corley*—is not a reliable guide to which practices should be considered "functional" for free speech purposes. It is true that, on average, it is easier

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however, so the difference in approach might have little practical importance. *See id.* at 62.

[82] I therefore take a different view than Professor Burk, who believes that evaluating challenges to technologies such as DeCSS "entails the formidable task of separating expression from function under the First Amendment." Burk, *supra* note 1, at 105. Because all expression is functional in a strict sense, it would be better to describe the task as one of assessing the function of code in the context in which it is presented relative to the values of the First Amendment.

[83] By "unprotected" I mean that liability may be imposed for expression in this context without any special liability rules drawn from the First Amendment. It is true that the government could not ban avowals of love—though this is in part because such a ban would be so silly it would raise virtually insurmountable suspicions that it was a pretext for something the First Amendment exists to stop—but that prospect is so unlikely that it is more helpful to focus on liability rules here. For an example of liability rules in this context, see Kathleen K. v. Robert B., 150 Cal. App. 3d 992, 93–94 (1984) (allowing plaintiff to proceed with respect to claims against a man who, allegedly said he had no diseases but who in fact infected the plaintiff with the herpes virus); Barbara A. v. John G., 145 Cal. App. 3d 369, 373 (1983) (allowing appellant to proceed with a misrepresentation claim against a man who told her he was infertile but who impregnated her).

[84] *See, e.g.*, United States v. Dinwiddie, 76 F.3d 913, 927–29 (8th Cir. 1996) (affirming in part an injunction based on bullhorn warnings of violence directed toward particular persons outside abortion clinics); United States v. Khorrami, 895 F.2d 1186, 1187–88 (7th Cir. 1990) (affirming conviction based on threatening mail and telephone calls); United States v. Gilbert, 813 F.2d 1523, 1525 (9th Cir. 1987) (reversing dismissal of indictment based on threatening private correspondence); United States v. Merrill, 746 F.2d 458, 460 (9th Cir. 1984) (affirming conviction based on private letters to community leaders, some containing live bullets, referring to killing President Reagan).

(less costly) to use digital content unlawfully than it is to use analogous non-digital content unlawfully. Code for a decryption tool may become a decryption tool in a way that a recipe for brownies cannot become brownies, and a guide to bomb-building cannot become a bomb. It is also true that this fact will affect the way readers will orient themselves toward expression in which code plays a part. In general, the easier it is to use content unlawfully, the more likely it is that listeners will see unlawful uses as something the content is for.

It does not follow, however, that digital content may be suppressed or regulated more heavily whenever the cost of illegal activity is low and its probability is correspondingly high. In some cases where little action is required to break the law, the First Amendment places the burden of obeying the law solely on the listener and will not allow liability to be shifted to the speakers.

It does not take very much effort for a bystander inspired or enraged by expression to pick up a rock and wing it through a window, for example, but the burden for holding a speaker liable for incitement is very high.[85] It may take little effort to commit suicide in response to a song, but no court has imposed liability on singers whose work was playing when a listener killed himself.[86] Conversely, the First Amendment may provide no protection in cases where relatively substantial efforts are needed to break the law, such as conspiring to manufacture drugs[87] or plotting a murder.[88] The level of effort needed to break a law implies different costs and benefits for different rules, but that fact alone cannot decide First Amendment questions.

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[85] *See, e.g.*, NAACP v. Claiborne Hardware Co., 458 U.S. 886, 927–28 (1982); Brandenburg v. Ohio, 395 U.S. 444, 447–49 (1969).

[86] Cases dismissing such claims as a matter of law include: Waller v. Osbourne, 763 F. Supp. 1144, 1151 (M.D. Ga. 1991) (sustaining demurrer against complaint alleging songs of Ozzie Ozbourne caused plaintiff's son to shoot himself); DeFilippo v. Nat'l Broad. Co., 446 A.2d 1036, 1041–42 (R.I. 1982) (holding as a matter of law that a stunt performed on Johnny Carson show, in which a person hanged himself, did not incite imitation by plaintiff's son); McCollum v. Columbia Broad. Sys., Inc., 249 Cal. Rptr. 187, 198 (Cal. Ct. App. 1988) (holding that defendants had no liability for dissemination of Osbourne's music that allegedly caused plaintiff's son to commit suicide); Olivia N. v. Nat'l Broad. Co. Inc., 178 Cal. Rptr. 888, 893 (Cal. Ct. App. 1981) ("The television broadcast which is the subject of this action concededly did not fulfill the incitement requirements of *Brandenburg*. Thus it is constitutionally protected.").

[87] United States v. Barnett, 667 F.2d 835, 843 (9th Cir. 1982) (holding that the First Amendment was no defense against an aiding and abetting indictment based on the mail-order sale of instructions for manufacturing drugs).

[88] *See* Rice v. Paladin Enters., Inc., 128 F.3d 233, 267 (4th Cir. 1997).

III. CODE AND CONTEXT

Contextual analysis of allegedly expressive uses of code on the Internet is harder than analysis of speech claims involving more conventional expression or speech claims based on conduct in the physical world. This part explains why this is so. Section A explains why judicial expectations about how most speakers and listeners use and understand code are important to free speech analysis. The remaining sections examine how social friction affects particular variables relevant to such expectations.

A. *Judicial Expectations and the Dominant Uses of Code*

Judges deciding free speech cases bring their own social understandings and expectations about expressive conventions and practices to bear on the facts before them.[89] Cases involving well-established expressive conventions and practices do not discuss these basic understandings because the parties and judges understand the conventions and practices the same way.[90] Disagreement on the fundamental social elements of expression may produce fractured opinions, as with the Court's struggle over regulations of nude dancing.[91]

In cases involving unfamiliar or unsettled practices or conventions, judges have to find ways of making sense of the behavior they see. The first step in this analysis is to ask how speakers and listeners employ and understand the behavior, and to what ends the behavior is directed. In form these are empirical questions, but courts in First Amendment cases do not engage in survey research. Instead, they answer these questions based on the record in the case at hand, "common sense," and analogies to well-understood behavior.

Such analysis begins with the question of how most people employ and understand the behavior. I will call this dominant use analysis. As relevant here, dominant use analysis helps judges do three things: understand the expressive aspects (or lack thereof) of the behavior at issue, assess the

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[89] As Judge Cardozo said, judges try to see cases clearly, but they can never see them through eyes other than their own. BENJAMIN N. CARDOZO, THE NATURE OF THE JUDICIAL PROCESS 13 (1921).

[90] Professor Post offers as an example of the importance of such understandings the gradual acceptance by judges of the role of movies in advancing First Amendment values. *See* Post, *Recuperating*, *supra* note 29, at 1252–53. *Compare* Mutual Film Corp. v. Industrial Comm'n of Ohio, 236 U.S. 230, 243–45 (1915) (holding that movies are not entitled to First Amendment consideration) *with* Joseph Burstyn, Inc. v. Wilson, 343 U.S. 495, 501–02 (1952) (holding that movies are entitled to such consideration).

[91] *See* Barnes v. Glen Theatre, Inc., 501 U.S. 560 (1991).

government's motives in regulating the behavior, and predict the costs and benefits of their rulings.

On the first point, the *Corley* court's version of the functionality argument shows how judges may employ dominant use analysis to relate behavior to First Amendment values. Recall that the Second Circuit said the code at issue, "[i]n its basic function, . . . is like a skeleton key that can open a locked door, a combination that can open a safe, or a device that can neutralize the security device attached to a store's products."[92]

What did the court mean by "basic" function? It might have meant the simplest function, though the court did not say that, and it is not clear why it is easier to use decryption code to steal movies than to study programming techniques or cryptography. It might have meant the function the author intended the program to serve, but that reading does not fit the facts of the case. Corley did not write the code; he said he was a journalist and that his posting of the code was part of a story.[93] Using the author's intention to identify the "basic function" would not work well anyway. Authors with idiosyncratic understandings of expression, such as Sklyarov, cannot determine conventional understandings of different practices.

A more plausible reading of the court's characterization is that the "basic function" is the one most people would understand the code to have, and, by extension, the function most people would use the code for. In *Corley*, this factual proposition led the court to focus on the risk that DeCSS would be used as a tool to steal movies, rather than as a tool for studying cryptography or as a tool to facilitate movie-watching in ways permitted by the fair use principles codified in the Copyright Act.[94] For the court, this decision justified its conclusion that the regulation at issue in the cases was content-neutral. If the court had believed the "basic function" of the code was to serve as a text for studying cryptography, it would have had to approach the case differently.

Bernstein v. United States Department of Justice makes this point even more clearly and shows how dominant use analysis can affect both the choice of doctrines to apply to a case and analysis of governmental motives.[95] Daniel Bernstein was a Ph.D candidate studying cryptography at the

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[92] Universal City Studios, Inc. v. Corley, 273 F.3d 429, 453 (2d Cir. 2001).

[93] *See infra* text accompanying notes 147–48.

[94] 17 U.S.C. § 107 (1976).

[95] Bernstein v. United States Dep't of Justice, 176 F.3d 1132, 1147 (9th Cir. 1999), *reh'g en banc granted and opinion withdrawn* 192 F.3d 1308 (9th Cir. 1999) (*Bernstein IV*) (T.G. Nelson, J., dissenting) ("[T]he basic error which sets the majority and the district court adrift is the failure to fully recognize that the basic function of encryption source code is to act as a method of controlling computers.").

University of California at Berkeley. To illustrate his research on a particular type of encryption system,[96] he wrote an English-language paper called "The Snuffle Encryption System" and two C-language programs that implemented the system, thereby proving that it worked.[97] Bernstein later wrote an English-language paper describing how to program a computer to perform the functions of his code; this paper was essentially an English translation of the source code in the programs.[98]

Federal law requires that certain encryption technologies be licensed by the government before they may be exported.[99] Bernstein asked the State Department whether his programs or his initial paper were subject to its export regulations.[100] The Department said the programs needed a license before they could be exported. It initially said the paper was not covered, then that it was, and finally, after Bernstein sued, that it was not.[101]

Bernstein's suit claimed the export regulations violated the First Amendment.[102] He advanced several theories, attacking the regulations both on their face and as applied to him.[103] One theory was that the regulations amounted to a prior restraint.[104] The Supreme Court's prior restraint cases require that licensing schemes include procedures and guarantees the export regulations did not have.[105] Under *City of Lakewood v. Plain Dealer Publishing Company*, these requirements applied if the export regulations had a "close enough nexus to expression, or to conduct commonly associated with expression" to present a risk of censorship.[106] For this reason, in *Bernstein*, the district court and Ninth Circuit both asked "whether

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[96] *See* Bernstein v. Dep't of State, 922 F. Supp. 1426, 1429 (N.D. Cal. 1996) (*Bernstein I*) (describing the system as a private-key, zero-delay system, which in effect allowed simultaneous and continuous encrypted dialogue between persons using the system).

[97] The programs were "Snuffle.c" and "Unsnuffle.c" respectively. *Id.*

[98] *Bernstein IV*, 176 F.3d at 1136.

[99] The relevant regulations were issued under an executive order implementing portions of the Arms Export Control Act. *Bernstein I*, 922 F. Supp. at 1429.

[100] *Id.* at 1430.

[101] 922 F. Supp. at 1430, 1434.

[102] *Id.* at 1430–31.

[103] *See id.*

[104] *Id.* at 1430.

[105] City of Lakewood v. Plain Dealer Publ'g Co., 486 U.S. 750, 759–60 (1988); Freedman v. Maryland, 380 U.S. 51, 54–55 (1965).

[106] *See City of Lakewood*, 486 U.S. at 759.

encryption source code is expression for First Amendment purposes."[107] Both courts said it was.[108]

With that decision in place, *Bernstein* was an easy case. The district court ruled in Bernstein's favor on his facial challenge to the regulations as a prior restraint,[109] and the Ninth Circuit affirmed on this ground.[110] (The panel decision was vacated when the court granted a petition for rehearing *en banc*, however, and the government promulgated new regulations that rendered the original dispute moot.)[111]

Judge Nelson dissented from the panel's ruling, asserting that code is not generally used in ways that implicate First Amendment values.[112] He thought the most common and most widely expected function of code was to control computers, not facilitate dialogue.[113] He concluded that Bernstein had no standing to bring a facial challenge to the regulations because the export regulations were not "directed" at expressive conduct, and therefore presented little risk of censorship.[114] This analysis connected the dominant

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[107] *Bernstein IV*, 176 F.3d at 1139.

[108] *Bernstein IV*, 176 F.3d at 1141 ("[E]ncryption software, in its source code form . . . must be viewed as expressive for First Amendment purposes."); *Bernstein I*, 922 F. Supp. at 1434–36 ("For the purposes of First Amendment analysis, this court finds that source code is speech.").

[109] Bernstein v. United States Dep't of State, 974 F. Supp. 1288, 1310 (N.D. Cal. 1997) (*Bernstein III*) (declaring the Commerce Department regulations unconstitutional); Bernstein v. United States Dep't of State, 945 F. Supp. 1279, 1290 (N.D. Cal. 1996) (*Bernstein II*) (declaring the State Department regulations unconstitutional).

[110] *Bernstein IV*, 176 F.3d at 1145.

[111] For a summary of the status of the case, *see* D.J. Bernstein, Summary of the Case Status, *at* http://cr.yp.to/export/status.html (last visited Oct. 1, 2003).

[112] *Bernstein IV*, 176 F.3d at 1148 (T.G. Nelson, J., dissenting).

[113] He claimed that "the basic function of encryption source code is to act as a method of controlling computers." *Id.* at 1147 (T.G. Nelson, J., dissenting).

[114] *Id.* at 1149. As he put it:

> Export of encryption source code is not conduct commonly associated with expression. Rather, it is conduct that is normally associated with providing other persons with the means to make their computer messages secret. The overwhelming majority of people do not want to talk about the source code and are not interested in any recondite message that may be contained in encryption source code. Only a few people can actually understand what a line of source code would direct a computer to do. Most people simply want to *use* the encryption source code to protect their computer communications. Export of encryption source code simply does not fall within the bounds of conduct commonly associated with expression such as picketing or handbilling.

use of code to the government's motive. For Judge Nelson, where the dominant use of code is not expressive, the government is probably not trying to suppress expression by regulating code. Judge Nelson made clear that this argument did not affect Bernstein's challenge to the regulations as applied to his academic use of code, a challenge for which he expressed some sympathy.[115]

Dominant use analysis is also relevant to the more general cost-benefit analysis of decisions. Where legal rules are at odds with common social understandings and uses of expression, decisions protecting speech may have higher social costs than in cases where the rules and expectations line up. *Winter v. G.P. Putnam's Sons*[116] is an example of such a case. The plaintiffs there bought *The Encyclopedia of Mushrooms*, "a reference guide containing information on the habitat, collection, and cooking of mushrooms."[117] They relied on the book to pick and eat mushrooms, which poisoned them.[118]

The plaintiffs sued the publisher and authors of the *Encyclopedia* on theories of negligence and strict product liability, alleging the book misled them into eating poisonous mushrooms.[119] The court rejected the strict product liability theory on the ground that holding the publisher liable without fault for inaccurate information would suppress too much speech, harming the "unfettered exchange of ideas."[120] The court did not deny that the publishers were better able than readers to avoid harm and insure against loss, but argued that the cost to public debate of creating such liability would be too high.[121] This argument casts readers of the *Encyclopedia* as

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Id. The majority did not take issue with this point, but felt the record showed that code is often used for expressive purposes. *Id.* at 1143 n.18.

[115] *See id.* at 1149. On this point, he said Bernstein "may very well" have had a claim that the regulations were unconstitutional as applied to his use of code. *Id.*

As Judge Nelson explained:

> This is not to say that . . . source code is not used expressively in some cases. Academics, such as Bernstein, seek to convey and discuss their ideas concerning computer encryption. As noted by the majority, Bernstein must actually use his source code textually in order to discuss or teach cryptology. In such circumstances, source code serves to express Bernstein's scientific methods and ideas.

Id. at 1148.

[116] 938 F.2d 1033 (9th Cir. 1991).

[117] *Id.* at 1034.

[118] They ultimately required liver transplants. *Id.*

[119] *Id.*

[120] *Id.* at 1035–36.

[121] *See id.* at 1035. The court rejected plaintiffs' negligence claims on similar grounds, though these claims presented no question of liability without fault. *Id.* at 1037.

autonomous agents who engage it as a subject for deliberation in public discourse rather than as an authoritative source to be relied upon in cooking.[122]

That characterization is debatable at best. The content of a "reference guide" to collecting and cooking mushrooms is relatively particular and probably would strike most readers as relatively verifiable, suggesting to them that they could rely on it in deciding what to eat. If readers do not know that publishers are immune from liability for mistakes, then readers will not adjust their level of reliance to take that immunity into account. The expected cost of immunizing the publisher from liability would be higher than if most readers read the *Encyclopedia* as they would read the *National Enquirer*.[123] That does not show that the decision is wrong, but it does show how the cost of protecting speech rises when protection is at odds with the dominant use of expression.

Dominant use analysis is important, but it is not everything. Two qualifications regarding that analysis are appropriate here. First, although dominant use analysis may imply high costs to protecting expression, that does not necessarily mean it implies low benefits. Even if only a few persons use code to understand cryptography, for example, the gains from those uses may still be quite high. As Judge Posner rightly notes, even if "[a] scientific or mathematical proposition" is "so arcane that its actual audience is very small," it still "may have a vast potential audience, comprising all the people who will eventually receive the information (greatly simplified, or perhaps impounded in some good or service)."[124] Even in cases where the analysis implies high costs from protecting speech, therefore, such costs do not by themselves justify regulation.

Second, though dominant use analysis is relevant to how people understand practices, and thus to the functions expressive practices perform, it should not *determine* First Amendment protection in most cases. Unusual expressive statements do not lose their protection just because they are unusual. They may lose protection, however, if a speaker employs

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[122] *Cf.* Post, *Recuperating*, *supra* note 29, at 1254.

[123] Assuming authors and publishers can verify which mushrooms are poisonous more cheaply than readers, then the rule misallocates the risk of error and gives authors and publishers too little incentive to verify the facts they report. This misallocation is a cost that applies to an immunity rule without regard to whether most users rely on the book.

[124] Richard A. Posner, *Free Speech in an Economic Perspective*, 20 SUFFOLK U. L. REV. 1, 12 (1986). In part, one might think of Judge Posner's notion of a potential audience as a way of representing the positive externalities of limited-interest speech, though, as the passage quoted in the text points out, these may be internalized in some cases, such as when they are embodied in a product.

conventions and practices so far-removed from general understandings of expression that his behavior cannot be understood as expressive. At that point, First Amendment protection ends, not because expression is unusual, but because it is so removed from expressive conventions and practices that judges do not accept it as expressive conduct at all. That was Dmitry Sklyarov's problem.

1. *Social Friction and Dominant Use Analysis*

The preceding section shows why dominant use analysis is important to First Amendment analysis, but it does not explain why that analysis is different in Internet cases involving code than in other cases. The difference lies in the low level of social friction on the Internet. Technological innovations have significantly lowered the costs of publishing, copying, and distributing content.[125] The low level of social friction on the Internet affects the way persons communicate with each other and how they understand and use expression. It therefore affects First Amendment analysis.

For example, dominant use analysis requires judges to make some assumptions about the behavior of users. Judges must ask how users approach expression. What do they think it is for? What do they think they are doing when they use it? A judge's estimation of the probable uses of code will inevitably shape her expectations about practices involving code.

What uses a judge deems probable depends in significant part on what uses are feasible at low cost. No one thinks a physics text is just a manual for building hydrogen bombs, for example. One reason is the great distance between understanding a theoretical description in a text and building a bomb. The high cost of bomb-building constitutes most of that distance.[126] If a physics text could prepare you to build a bomb with no more than a mouse click, then bomb-building would be one thing you would see the text as being for.

The same point might apply to analysis of decryption code in a computer science classroom. But what if a student with a laptop computer could download an instructor's code and, while sitting in class, disable Internet filters or steal movies? What if non-students could do so? Apart from the

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[125] Jessica Litman makes this point well. *See* JESSICA LITMAN, DIGITAL COPYRIGHT: PROTECTING INTELLECTUAL PROPERTY ON THE INTERNET 12 (2001).

[126] Another reason involves social conventions about textbooks, which support an expectation that they are to be engaged as part of a learning process. As the analysis in the text suggests, however, these conventions are subject to change, and one reason they might change is a lessening of the friction separating the classroom from an applied domain in which bombs might be built or content copied.

legal or ethical aspects of the situation, the easier it is to employ course materials in hacking the less distinct the practices of learning and hacking will seem.

The district court opinion in *Universal City Studios, Inc. v. Reimerdes* provides a good example of such behavioral analysis. Judge Kaplan employed a rational actor presumption to gauge the likely effects of distributing DeCSS. He viewed DeCSS abstractly and, on that view, presumed it would be used to steal movies because low social friction on the Internet implied widespread and instantaneous distribution of the code. Widespread distribution implied that, even if most people were as honest in the digital age as they had been before, pirates probably would get their hands on the means to break the law.[127]

To the extent widespread distribution implied widespread piracy, then so long as individual pirates did not get too greedy, the chance that they would even be noticed would be low. The cost of suing individual pirates probably would exceed any judgment, and the cost of pursuing all pirates would be prohibitive. The expected cost of piracy therefore would be very low.[128] If one makes the safe assumption that most people have a fairly good grasp on these facts, then it is very likely that most people will view DeCSS as a tool to steal movies and, by extension, will use it for that purpose. Both opinions in *Corley* seem to accept this analysis, though they do not state it fully.

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[127] Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 331 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001) ("Given the virtually instantaneous and worldwide dissemination widely available via the Internet, the only rational assumption is that once a computer program capable of bypassing such an access control system is disseminated, it will be used.").

[128] The statements in this paragraph must be qualified somewhat because technology has also increased the probability that rights holders can identify pirates. *See* LITMAN, *supra* note 125, at 12–13. On balance, however, the low cost of piracy probably outweighs the risk of detection and suit, at least for individual pirates. As Judge Kaplan pointed out in *Reimerdes*, individual pirates may not have much wealth, and therefore may not be worth suing even if they can be found. 111 F. Supp. 2d at 335. So while the increased risk of detection on the Internet might increase the expected cost of piracy somewhat, it does not increase the probability of being sued as much. Anecdotal evidence of widespread stealing of music from *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004 (9th Cir. 2001), suggests that the effect of lower piracy costs is greater than the effect of any increased risk of detection. *See id.* at 1014. The RIAA's statements regarding its plan to sue individuals who copy music provide some additional support for these views. Bruce Orwall, et al., *Pump Up the Volume: Music Industry Presses 'Play' On Plan to Save Its Business*, WALL ST. J., Sept. 9, 2003, at A1 (noting that industry suits targeted high-volume copiers).

2. *Social Friction and the Stability of Expressive Practices*

Practices can only help courts decide cases if they are stable enough to be recognized and evaluated relative to First Amendment values. The stability of practices is in part a function of social friction. A practice is recognizable as a practice because the interactions that constitute it are bounded in a way that distinguishes it from other practices. Social friction, such as the time and effort needed to move among practices and contexts, helps establish these bounds. The less effort required to move among contexts and conventions, the less distinct each context and convention will seem.

Indistinct or unstable conventions and practices provide relatively weak signals to judges about how the behavior at issue in particular cases relates to First Amendment values. *Microsystems Software, Inc. v. Scandinavia Online, AB*[129] provides an example of this point. That case involved two hackers who reverse-engineered a program called Cyber Patrol.[130]

Cyber Patrol is an Internet filter, a type of program most commonly billed as a tool parents can use to keep children from seeing web sites parents do not want them to see.[131] The essence of the product is a database of web sites the filter will not allow a user's computer to contact. A good filter is one that blocks all the sites the purchaser wants to block while blocking few if any other sites. A bad filter may block too many acceptable sites or too few objectionable ones. Some hackers accuse filtering firms of pursuing undisclosed political agendas, such as blocking sites for liberal activist groups, or of being so sloppy in their work that advertisements for the filter are misleading.[132]

In early 2000, Eddy L.O. Jansson, working from Sweden, and Matthew Skala, working from Canada, decided to take Cyber Patrol apart to see how it worked.[133] They were particularly interested in what web sites it blocked. Their efforts produced four results. The first was an essay called *The Breaking of Cyber Patrol® 4*.[134] This essay described in some detail the

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[129] 226 F.3d 35 (1st Cir. 2000).

[130] *Id.* at 38.

[131] *Id.*

[132] There are web sites opposing filtering software. *See, e.g.*, http://www.peacefire.org (last visited Oct. 1, 2003).

[133] *See Microsystems Software*, 226 F.3d at 38.

[134] Eddy L. O. Jansson & Matthew Skala, *The Breaking of Cyber Patrol®* 4 (Mar. 3, 2000), *available at* http://www-2.cs.cmu.edu/~dst/CP4break/cp4break.html (last visited Oct. 3, 2003) [hereinafter *Essay*].

process by which Jansson and Skala were able to discover the encryption and decryption code protecting the database, and how they were able to break the encryption. The discussion is in English, with different types of code being used to illustrate particular points.[135]

The essay mostly focused on Cyber Patrol, but it also discussed general computing practices and the mathematics of encryption.[136] The essay also analyzed both the general level of Cyber Patrol encryption security, which Jansson and Skala thought was poor, and the database of blocked sites. Jansson and Skala concluded the database was fairly free from political agendas but thought it blocked a number of sites that did not meet the program's stated criteria for a block.[137]

In addition to the essay, Jansson and Skala released three programs. Two of these were released only in source-code form; they were written in the (C) language to run on the GNU/Linux operating system.[138] One of these programs illustrated Jansson and Skala's attack on the file containing the database of blocked sites. The other illustrated the attack on Cyber Patrol's method of protecting a password that would disable the blocking function of the program, allowing access to blocked sites. The essay presented these programs as illustrations of the attacks it described,[139] and the body of the essay sometimes referred to these programs to illustrate a particular point. The third program, called cphack.exe, was released in both source and binary-code form, and was written to run on Windows. Unlike the other two programs, Jansson and Skala's description suggested that users were to engage cphack.exe as a tool to disable CyberPatrol, rather than as a tool for

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[135] The essay analyzes several portions of binary code from Cyber Patrol, underscoring Professor Touretzky's testimony in *Reimerdes*. *See Essay*, *supra* note 134, § 5.

[136] *See id.*

[137] For example, they found that Cyber Patrol blocked the web site for the city of Hiroshima, Japan, which was classified with sites blocked as "militant/extremist." Matthew Skala, *New Media Copyright Extensions Would Harm Canada*, *available at* http://ansuz.sooke.bc.ca/icsub.html#cp4break (last updated Jan. 31, 2003) [hereinafter Skala, *New Media*].

[138] *Essay*, *supra* note 134, § 8.

[139] *Essay*, *supra* note 134, § 8 ("Also available is C source for two command-line programs illustrating the cryptographic attacks on cyber.not (cndecode.c) and the HQ password hash (cph1_rev.c). These programs were written under Linux and are not guaranteed to work anywhere else."). Mr. Skala has informed me that these programs were written in a cross-platform style, however, so the disclaimer should be read literally—the programs were expected to work on other platforms as well. E-mail from Matthew Skala, to David McGowan, Associate Professor of Law, University of Minnesota Law School (May 28, 2002) (on file with author).

learning about it or about cyrptography in general.[140] Jansson and Skala put all three programs and the essay together in a single Zip (compressed) file, in which the essay was linked to the programs.[141] On March 11, 2000, they announced on a hacker website that they had posted the package on Jansson's website in Sweden in a file called "cp4break."[142] On March 15, Microsystems sued Jansson and Skala on various theories and asked the court to enjoin distribution of the code they had written.[143] An oversight led Microsystems to prepare an order enjoining distribution of the essay as well. The court adopted the proposed order, issuing a restraining order. Later, when the case settled, the court entered a stipulated permanent injunction prohibiting distribution of both cphack.exe and the cp4break.zip package.[144]

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[140] *Essay*, *supra* note 134, § 8 ("We have developed a set of software for getting around Cyber Patrol. People oppressed by Cyber Patrol will want to take a look at CPHack, a Win32 binary which will decode the userlist for you, and also let you browse the different banlists."); *Id.* § 8.1 ("The basic functionality is to let you load and browse the information of a cyber patrol .not file and/or the user information contained in a cyberp.ini file."). In a submission to the Canadian government regarding copyright policy, Skala later characterized cphack.exe as illustrative as well. *See* Skala, *New Media*, *supra* note 137. He stated:

> Jansson and Skala wrote a lengthy essay describing the procedure used for analysing Cyber Patrol and what was found. They also wrote some software of their own illustrating the cryptographic techniques, including a program called "cphack" which could decode all the secret files in a Cyber Patrol installation, displaying for the user the list of blocked Web sites.

Id.

[141] *Essay*, *supra* note 134, § 8 ("A complete package with this essay, the binaries, and various sources and related files are available as cp4break.zip (~360Kb).").

[142] *See* Findings of Fact and Conclusions of Law ¶¶ 7–9, Microsystems Software, Inc. v. Scandinavia Online AB, 226 F.3d 35 (1st Cir. 2000) (No. 00-10488) (copy on file with author).

[143] The claims included copyright infringement, breach of contract, theft of trade secrets, and interference with prospective business advantage. Complaint ¶¶ 20–38 Microsystems Software, Inc. v. Scandanavia Online AB, 226 F.3d 35 (1st Cir. 2000) (No. 00-10488) (copy on file with author). The plaintiffs did not allege a violation of the DMCA, though they could have. Based on my conversations with plaintiffs' counsel, Irwin Schwartz (who is a former colleague from practice), I believe plaintiffs chose not to plead DMCA violations because they wanted a fast injunction from the court and did not want to ask for quick action based on a relatively new statute with which the court might not be familiar. Though one could quibble with the approach as an academic matter, it would be hard to quibble with the results, at least from Microsystems' point of view.

[144] The case settled quickly, and on March 28, 2000, the district court entered a stipulated permanent injunction prohibiting Jansson and Skala from publishing any of their work. Microsystems Software, Inc. v. Scandinavia Online AB, 98 F. Supp. 2d 74, 74

Microsystems presents several problems for a judge, each of which are related to the low cost of distributing content on the Internet and the correspondingly low level of social friction available to stabilize expressive practices. In the first place, how should a judge think about what Jansson and Skala were doing? Was it research? Was it social or political commentary akin to journalism? Was it a loosely anarchic political act? Was it sheer hooliganism? None of these descriptions matters very much as such. What Jansson and Skala were doing was manipulating CyberPatrol's code and writing code of their own. But these descriptions are the sort of thing that help judges make sense of the social significance of behavior and relate that behavior to First Amendment values. And on this point, the case shows how wide the variance in such characterizations can be.

The district court thought Jansson and Skala's actions were obviously harmful and, at some level, unlawful. It felt the only real free speech rights at issue were the rights of parents to censor the content their children could see.[145] In contrast, the Librarian of Congress cited *Microsystems* as an example of the need to exempt the decrypting of Internet filter databases from the anti-circumvention provisions of the DMCA.[146] The Librarian cited

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(D. Mass. 2001). The injunction prohibited the defendants from "publishing the software source code and binaries known as 'cp4break.zip' or 'cphack.exe' or any derivative thereof." *Id.* The language of the order was ambiguous because cp4break.zip contained the essay as well as the programs. The court's definitions contributed to this ambiguity. Its findings of fact define the "Bypass Code" as being "technically known as cp4break.zip and cphack.exe." Findings of Fact & Conclusions of Law, ¶ 18, Microsystems Software, Inc. v. Scandinavia Online AB, 226 F.3d 35 (1st Cir. 2000) (No. 00-10488) (copy on file with author). The court earlier had defined "Bypass Code" as a program "to allow users of a computer running Cyber Patrol software to defeat its effectiveness." *Id.* ¶ 6. Probably the court meant only to enjoin distribution of the programs, and perhaps only of cphack.exe. But as written, the order enjoins distribution of the file, not just the programs. Quite understandably, the First Circuit repeated this error, referring to "a bypass code known as 'cp4break.zip' or 'cphack.exe.' " *Microsystems Software*, 226 F.3d at 37.

[145] *See Microsystems Software, Inc.*, 98 F. Supp. 2d at 75. The *Microsystems Software* court stated:

> Under our Constitution all have the right to disseminate even evil ideas and such ideas cannot by law be suppressed by the government. On the other hand, parents, in the exercise of their parental obligation to educate their young children, have the equal right to screen and, thus, prevent noxious and insidious ideas from corrupting their children's fertile and formative minds.

Id.

[146] For the exemption ruling, *see* 37 C.F.R. § 201.40(b) (2002). For the analysis of the Librarian of Congress, *see* 65 Fed. Reg. 64,555, 64,564 (Oct. 27, 2000) (to be codified at 37 C.F.R. pt. 201), *available at* http://www.loc.gov/copyright/fedreg/2000/

a public interest in comment and critique of the database of blocked sites, which is one function Jansson and Skala's essay served. (One could argue the illustrative programs served this purpose indirectly.) The Librarian did not mention Jansson and Skala's distribution of cphack.exe, which was not aimed at critiquing the Cyber Patrol block list. The district court did not discuss the essay. But especially in light of the programs Jansson and Skala wrote to illustrate the essay, the real-world distance between these two very different characterizations is very small.

Corley provides a related example of this point. Jon Johansen was the main author of DeCSS, but the case was filed against Eric Corley, who posted DeCSS on a web site he ran from New York. Though long involved in technology and what might be called "hacking" circles, Corley is neither an engineer nor a software developer. He has a degree in English and considers himself a journalist.[147] In 1984, using the pen name Emmanuel Goldstein,[148] Corley began publishing *2600: The Hacker Quarterly*.[149] At the time of trial, the magazine had a hard-copy circulation of around 60,000, counting both newsstand and subscription sales.[150] The magazine made Corley something of a media figure on hacking-related issues, and he has been interviewed many times by prominent members of the national news media.[151]

Corley described *The Hacker Quarterly* as an anthology of hacking-related works: "[p]robably the Readers Digest of the hacker's world."[152]

65fr64555.pdf (last visited Oct. 1. 2003).

[147] *Reimerdes* Transcript, *supra* note 9, at 782 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003).

[148] The name is taken from the leader of the imaginary resistance movement in George Orwell's 1984. *Reimerdes*, 111 F. Supp. 2d at 308 (citing *Reimerdes* Transcript, *supra* note 9, at 787, 827 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003)).

[149] This name was taken from the discovery in the 1960s that transmitting a 2600 hertz tone over a long distance trunk line invoked the "operator mode," allowing the transmitter to make telephone calls without paying the phone company. Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 308 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001) (citing *Reimerdes* Transcript, *supra* note 9, at 786–87 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003)).

[150] *Reimerdes* Transcript, *supra* note 9, at 778 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003).

[151] *See id.* at 780–81, 785.

[152] *Id.* at 798.

Corley looked for and published material of interest to hackers, but he exercised virtually no editorial control over the magazine's content.[153] Authors could choose to submit works anonymously, and Corley did little if any fact-checking.[154]

Charitably viewed, Corley's editorial philosophy seems to have been that error sparks dialogue as well as truth (maybe better), and the *Quarterly* existed to help hackers engage in dialogue on points of interest to the hacking community. As a practical matter this meant that *The Hacker Quarterly* made information available and left readers to decide how to use it.[155]

The district court disapproved of several *Hacker Quarterly* articles that were admitted as evidence of the magazine's approach. Judge Kaplan said the magazine "has included articles on such topics as how to steal an Internet domain name, access other people's e-mail, intercept cellular phone calls, and break into the computer systems at Costco stores and Federal Express."[156] He also mentioned the (presumably related) "guide to the criminal justice system for readers charged with computer hacking."[157]

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[153] Mr. Corley did say *The Hacker Quarterly* had "guidelines for the articles, such as we don't print articles that espouse destruction or immature acts or just various bad things." *Id.* The record says nothing about how these criteria were defined in practice.

[154] *See id.* at 795.

[155] *See id.* at 789–90:

> Q. In other words, in the Hacker Quarterly, do you tell your readers the kinds of things they should and shouldn't do?
>
> A. Well, we try not to be too moralistic. What we mostly do is print information. We have an editorial at the beginning of every issue where we expound on various thoughts, which is something that I write, and also in the replies to letters in the magazine, which is also printed every issue. If we give any kind of moral guidance or judgment, that's where it is, but in the actual articles themselves, it is more or less a compilation of material that is already out there, and we kind of present it to the people to show them this is what people are saying, this is the information that's out there, this is how systems supposedly work or don't work. And people write in with corrections, they write in with additions, and we have a dialog going based on that.

Id.

[156] *Reimerdes*, 111 F. Supp. 2d at 308–09. The record portrays some of these articles as more substantive than the opinion suggests. The article on intercepting cell-phone calls, for example, included a discussion of "the Electronic Communication Privacy Act which makes such interception illegal." *Reimerdes* Transcript, *supra* note 9, at 796 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003).

[157] *Reimerdes* Transcript, *supra* note 9, at 796 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_

Corley testified that readers could use such articles either to commit unlawful acts or to inform themselves about risks the articles proved were real and, being informed, take action to protect themselves.[158]

Corley exercised little editorial control over the content of his magazine.[159] That fact, combined with the ambiguous nature of some of these articles, made *The Hacker Quarterly* an unusual magazine. Social understandings of the physical world make it clear that mail-order photocopies of instructions on how to make methamphetamine do not contribute to public discourse in any way comparable to the *New York Times*.[160] Even with respect to its hard-copy circulation, however, such distinctions are not as clear for the *Hacker Quarterly*.

Some content in the *Quarterly* was very specific, such as describing particular security flaws in particular programs, and some was more general. All was aimed at hackers, but was generally available by subscription and at newsstands. Was the *Quarterly* a conventional magazine, such as *Time*, or a recognizably counter-cultural contributor to discourse, such as *High Times*[161] or *Soldier of Fortune*,[162] or something else?

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transcript.html (last visited Oct. 1, 2003).

[158] As Corley testified regarding the article discussing how to gain access to other people's e-mail accounts,

> [T]his is an example of an article that can be used in two ways. We print the information. It can be used in a good way; that is, users can learn about privacy, they can figure out ways to prevent them from happening. Or it can be used in a bad way, someone can take this an actually start spying on people.
>
> We don't have a big moral discussion about what is going to happen with the information we print, because the information is already out there. As I said, we are more or less an anthology of what is being distributed and we like to think that by printing this information, we wake people up.

Reimerdes Transcript, *supra* note 9, at 799 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003).

[159] *See infra* Part II.E.

[160] *See* United States v. Barnett, 667 F.2d 835, 842 (9th Cir. 1982) (finding First Amendment no defense against aiding and abetting indictment based on mail-order sale of instructions on manufacturing drugs).

[161] *See* http://www.hightimes.com (last visited Oct. 10, 2003).

[162] *See* Eimann v. Soldier of Fortune Magazine, Inc., 880 F.2d 830, 832–33 (5th Cir. 1989) (describing content of the magazine and classified advertisements therein); *see also* Braun v. Soldier of Fortune Magazine, Inc., 968 F.2d 1110, 1112–13 (11th Cir. 1992) (discussing content of classified advertisement). Both *Eimann* and *Braun* involved advertisements amounting to commercial speech, an important difference from Corley's case.

In 1995, Corley established a website for *2600*,[163] which supplements but does not duplicate the content of the magazine.[164] The low costs of social interaction on the Internet allowed Corley to produce the web site through means so fluid and anonymous they would be unimaginable for more mainstream publications.[165] This fact, and Corley's editorial indifference, made the web site resemble nothing so much as an interactive bulletin board, accessible around the world, dedicated to discussions of hacking and, possibly, techniques on how to break the law.

For these reasons, the web site played an even more ambiguous role than the magazine. Did the ease of using digital content such as DeCSS cause readers to perceive the site more as a resource posting hacking tools than a source of dialogue?[166] Did the site's (admittedly slight) editorial content affect its posting of other content? Was Corley a "real" journalist, whatever that might be, or merely a trafficker or "fence" trying to cast a faint patina of speech over a site designed to help people to break the law?[167] Was he

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[163] *Reimerdes*, 111 F. Supp. 2d at 309 (citing *Reimerdes* Transcript, *supra* note 9, at 790 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003)).

[164] Deposition of Emmanuel Goldstein (a/k/a Corley) at 91, *Reimerdes*, (No. 00-Civ-0277) [hereinafter Corley Dep. Transcript], *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000627_ny_goldstein_dep.html (last visited Oct. 10, 2003). ("The web site is a supplement of the magazine. It's not a duplication of the magazine . . . . I don't think we ever duplicate anything other than the covers on the web site.").

[165] Corley described the 2600 system as a "shell machine" used by persons affiliated in some way with the magazine. With the exception of the one-person office staff, these people were volunteers, not employees. They might or might not use their given names (they seemed generally to use Internet nicknames), worked from "all different parts of the world," and Corley seemed not to know very much about them. *Id.* at 107–10. Indeed, he felt "[i]t's impossible, and I don't think desirable, to know exactly who they are or where they are, what their Social Security number is. It's not what we're about." *Id.* at 110. Authors who write more than one piece for the site receive an e-mail account on the 2600 system, which presumably might or might not be checked. *See id.* at 107. One-time authors did not receive such an account, and Corley might have no way of finding them if there was a problem with their piece. *Id.* at 114–15.

[166] Readers could tell when they were in the classified section containing the advertisements at issue in the *Soldier of Fortune* cases, and presumably would perceive the ads as serving a different function than other content.

[167] *Cf.* Bolger v. Youngs Drug Products Corp., 463 U.S. 60, 67 (1983) (characterizing pamphlets including information about contraception and contraceptives as commercial speech); Valentine v. Chrestensen, 316 U.S. 52, 55 (1942). The Court in *Valentine* held that a businessman could not evade a prohibition on distributing commercial leaflets by distributing a two-sided leaflet with advertising on one side and a

neither, both, or something completely different? Was he one thing at some times and another thing at others? Or is the problem that these categories no longer mean as much as they did when the friction that distinguishes and stabilizes them is gone?

3. *Dominant Use Analysis, Social Friction, and Social Meaning*

These cases exemplify the importance of social context and conventions in free speech analysis involving code. *Bernstein* is a perfect example of how the presumed dominant use of code affected at least Judge Nelson's understanding of what it is for, and how the strong social conventions surrounding academe seemed to alter that general understanding for Bernstein's particular case.

Microsystems is an example of how the lack of such strong academic conventions allowed the court to charge ahead with its injunction, thus overlooking the expression in the essay and illustrative programs.[168] Even if it had taken the time to consider these aspects of Jansson and Skala's work, the friction-free interaction among the essay and illustrative programs, and the distribution of these three items in a file with the cphack.exe tool, would have made for complex analysis the court might have found unfamiliar and difficult. If Jansson and Skala had done their work in connection with a university class, or with a recognized consumer group, the court probably would have viewed their work differently, in significant part because it would have expected readers to view their work differently.

Similarly, *Corley* is an example of how the ambiguous social standing of 2600.com was not enough to overcome judicial presumptions that DeCSS was a tool for stealing movies. If the *New York Times* had included in its story on the case a link to a copy of DeCSS posted on its own site, rather than linking to 2600.com and its mirror page, as the *Times* actually did,[169] the

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business-related protest about government action on the other. The Court found that "the stipulated facts justify the conclusion that the affixing of the protest against official conduct to the advertising circular was with the intent, and for the purpose, of evading the prohibition of the ordinance." *Id.*

[168] That the case was not fully litigated contributed to the problem, too.

[169] The *Times* ran a story including links both to 2600.com and to 2600's catalog of DeCSS mirror sites. *See* Aff. of Richard J. Meislin, Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294 (S.D.N.Y 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001) (No. 00-Civ-0277 (LAK)), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000510_ny_meislin_affidavit.html (last visited Oct. 2, 2003) (citing Carl S. Kaplan, *First Amendment Lawyer Takes on Movie Studios in DVD Case*, NEW YORK TIMES, April 28, 2000, *available at* http://www.nytimes.com/library/tech/00/04/cyber/cyberlaw/28law.html (last visited Oct.

courts would have felt compelled to give reasons for disregarding the presumptive role of the *Times* in public discourse.[170] That they did not bother to do so for 2600.com implies an undefended judgment that the web site and its content did not advance free speech values.

I doubt such judgments can be defended. In both *Microsystems* and *Corley*, judicial worries over the "functionality" of code and judicial unfamiliarity with the expressive practices and conventions the defendants employed led courts to overlook legitimate contributions to public discourse. As to these aspects of the cases, the courts each got the free speech analysis wrong.

B. *Public vs. Private Distribution*

Publicly disseminated expression relates differently to First Amendment values than privately disseminated expression. Speakers and listeners approach publicly disseminated expression differently from private expression.[171] Public expression advances First Amendment values in a way

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2, 2002).

[170] That presumptive role is discussed more fully in Part II.B.

[171] If nothing else, persons intent on breaking the law would rationally prefer privacy to widespread attention. Listeners who expect sunshine to be the best disinfectant, LOUIS BRANDEIS, OTHER PEOPLE'S MONEY 62 (Sherman F. Mittell, ed., Nat'l Home Library Found. 1933), would tend to presume that publicly distributed expression was not itself unlawful. *See* GREENAWALT, *supra* note 24, at 116–18; 261–77. Corley made this point at his deposition, saying:

> [I]f we were involved in a criminal conspiracy of some sort, the way we are doing it now, the way we have it up on our web site, would be absolutely the worst, most inefficient way to both engage in the crime and distribute the criminal material.
>
> Q: What would be the better way?
>
> A. To have an organized network of people that keep quiet, that don't tell the entire world about it, to surreptitiously distribute the code everywhere.

Corley Dep. Transcript, *supra* note 164, at 278. This is one reason the result in *United States v. Kelner* seems so strained. *See* United States v. Kelner, 534 F.2d 1020 (2d Cir. 1976). In that case, a member of the Jewish Defense League gave a press conference to protest the visit of Yassar Arafat to the United Nations. *Id.* at 1021. Dressed in camouflage gear and with a pistol on the table before him, Kelner looked into the cameras and said "We are planning to assassinate Mr. Arafat." *Id.* The clothes, the pistol, and the animosity might tend to make the threat credible, but one's instinctive reaction is that no one intent on assassinating a political figure calls a press conference and broadcasts that fact in advance. A real assassin would not want to alert both the target and the police to the plan, and that social logic makes Kelner's statement read more like hyperbole than a true threat. For a discussion of how the public nature of expression

private expression does not, and the risk that regulation will harm those values is greater when public expression is regulated than when private expression is regulated.[172] For these reasons, Courts traditionally have asked whether expression was aimed at individuals or small groups to help distinguish cases in which First Amendment values were at stake from cases posing no threat to those values.[173]

Media firms present one example of judges giving special treatment to publicly distributed expression. Formally, First Amendment doctrine recognizes no differences between media defendants and other persons.[174] As a practical matter, however, the Court has given special consideration to media speakers facing regulations directed at speech.[175]

This special treatment made sense in the past. As Professor Post has noted, because media speech is by definition widely disseminated,[176] it is easy for readers and listeners to understand that media speakers intend to participate in public discourse.[177] It is also easy to see that media speech creates common subjects for discussion. Large numbers of people can talk to each other about media speech because large numbers of people will have heard about, or at least have low-cost access to, media speech.[178] A third reason is that regulation of media speech could impoverish public discourse.

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affects analysis, see *Planned Parenthood of the Columbia/Willamette, Inc. v. American Coalition of Life Activists*, 244 F.3d 1007, 1018–19 (9th Cir. 2001).

[172] For the cost-benefit analysis, see Posner, *supra* note 124, at 8–36.

[173] Public dissemination is relevant to constitutional protection, but not decisive. Commercial speech, for example, is widely disseminated but receives less protection than other speech because of its particular relationship to First Amendment values. Central Hudson Gas & Elec. Corp. v. Public Serv. Comm'n, 447 U.S. 557, 561–63 (1980); Robert Post, *The Constitutional Status of Commercial Speech*, 48 U.C.L.A. L. REV. 1, 27–28 (2000) [hereinafter Post, *Commercial Speech*]. Obscenity and pornography using real children, which receives no First Amendment protection, for example, Ashcroft v. Free Speech Coalition, 535 U.S. 234, 245–46 (2002), could be publicly distributed as well.

[174] *E.g.*, Bartinicki v. Vopper, 532 U.S. 514, 525 & n.8 (2001) (noting that the Court did not analyze speech claims of media and non-media defendants differently); First Nat'l Bank of Boston v. Bellotti, 435 U.S. 765, 777 (1978) (explaining that the inherent value of speech does not depend on the identity or corporate form of the speaker).

[175] One easy example is the Court's attention in libel cases to whether content is directed to a matter of public interest and concern. *E.g.*, Philadelphia Newspapers, Inc. v. Hepps, 475 U.S. 767, 775 (1986). Concern for the institutional role of media speakers does not exempt them from generally applicable laws, however. *E.g.*, Cohen v. Cowles Media Co., 501 U.S. 663, 669–70 (1991).

[176] CONSTITUTIONAL DOMAINS, *supra* note 24, at 172.

[177] *See id.*

[178] *See id.* at 169–72.

Silencing or deterring expression by the *New York Times* or *Wall Street Journal* would deprive millions of people of information they deem credible, which therefore would influence significantly the formation of opinions and general public dialogue. Regulating a local gossip chattering about neighborhood affairs would not have the same effect.

The reasons justifying special treatment for media speakers rested largely on the traditionally high cost of general publication. Few in the past could afford the technology and licenses necessary to publish or broadcast. And television, radio, and newspapers enjoy large economies of scale,[179] implying the minimum efficient size of media firms is relatively large and that small voices would be drowned out even if they managed a squeak or two. Individual speakers or small groups tended to resort to inexpensive means of expression instead, which is one aspect of the social history of the public forum.[180]

Things are different now. Because web sites are easily accessed by the growing number of persons who use the Internet, such sites may form the basis for general discourse among large numbers of persons.[181] Because the Internet reaches large numbers of people and facilitates the exchange of ideas, making information generally available on the Internet evinces an intention to engage in public discourse similar to the intention courts have attributed to media outlets in the past. No sane person wanting to speak privately would post their expression on a web site unless access was strictly controlled (and even then it would not be very smart). Knowing that, persons viewing uncontrolled sites will presume that the content is intended for general consideration.[182]

This state of affairs is part of what the Court had in mind in *ACLU v. Reno* when it referred to the "vast democratic forums of the Internet."[183] Democratization of distribution, however, eliminates most of the case for treating media firms differently from individual web sites. Of the traditional

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[179] On the economics generally, see Yochai Benkler, *Free as the Air to Common Use: First Amendment Constraints on Enclosure of the Public Domain*, 74 N.Y.U. L. REV. 354, 374 (1999).

[180] *See generally* Volokh, *supra* note 1; CONSTITUTIONAL DOMAINS, *supra* note 24, ch. 6.

[181] Steps to privatize a publication, such as by password protecting a site or limiting membership on a listserv, might affect this conclusion, though they would not be conclusive. Some sites protected by password, such as the *Wall Street Journal Online*, are engaged in public discourse. *See* http://www.wsj.com (last visited Oct. 2, 2003).

[182] This is true even though content on the Internet is far more varied than generally available information in the past, a topic I discuss in the next Section.

[183] 521 U.S. 844, 868 (1997).

justifications, only popular recognition of the *New York Times* as an institutional force in public discourse distinguishes the *Times* from 2600.com. And whether people recognize sites such as 2600.com as contributors to public discourse turns in part on whether courts treat such sites that way. Feedback between legal characterizations and popular understandings implies that the Second Circuit's refusal to take Corley seriously as a journalist could become a self-justifying conclusion, though it is unlikely that such legal characterizations could survive long in the face of contrary social understandings.

The difference between public and private expression is murkier than the discussion to this point suggests, however. Even if a meeting is "public" in the sense that anyone could attend, the topic may be so focused that only persons with very particular interests will show up. Several cases involving meetings to protest taxation and, perhaps, teach people to cheat on their taxes, have this character.[184] The narrow focus of attendees at such meetings will tend to orient speakers and listeners to view expression at the meeting as a basis for further personal action rather than as a subject for collective deliberation. In general, the smaller a group is, and the more particular the interest that brings its members together, the more likely the group is to perceive expression as instructions on performing particular tasks, such as tax evasion, rather than as an occasion for independent deliberation.[185]

The lack of social friction on the Internet makes it hard to say what is and is not a small group of like-minded persons whose communications invokes reliance interests rather than the First Amendment interest in independent-minded deliberation. The initial distribution of DeCSS illustrates this point. After writing DeCSS, Jon Johansen posted the code to

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[184] *See e.g.*, United States v. Freeman, 761 F.2d 549 (9th Cir. 1985); United States v. Dahlstrom, 713 F.2d 1423 (9th Cir. 1983); United States v. Buttorff, 572 F.2d 619 (8th Cir. 1978).

[185] Professor Greenawalt makes this point very well:

> The troublesome borderline for the public-private dichotomy concerns moderately sized audiences selected because of likely special sympathy for the speaker's encouragement. Important here would be the size of the group, how carefully selected it is, the strictness of its standards of confidentiality, whether or not the basic message of the speaker is also communicated publicly, and whether or not the members of the group are generally known, all factors that bear on public access to the message and the prospect of countervailing communication.

GREENAWALT, *supra* note 24, at 118.

The social cues provided by a common interest among group members may trump the size of a group, however. *Id.* A lawyer addressing hundreds of class-action plaintiffs considering a settlement offer is practicing law; a lawyer addressing a dozen citizens at a political caucus is not. *Id.*

LiViD (which stands for Linux Video),[186] a listserv devoted to developing a DVD player for the GNU/Linux operating system.[187]

LiViD was open to anyone interested in the project, but content on the list was most likely to be read in the first instance by a fairly small group of technically sophisticated persons with a particular interest in the project. They probably expected to engage in technical discussions with technically sophisticated persons. This aspect of the list resembles the tax protestor meetings some courts have viewed as at least partly outside First Amendment protection. On the other hand, because social friction on the Internet is so low, there would be a high probability that the code, or any other posting of general interest, would quickly find a more general audience. Persons posting to the list had to know that as well.[188]

By lowering the cost of publication, the Internet has changed what it means to distribute expression either generally or to a limited audience. Because widespread distribution is more common, the fact of widespread distribution is less useful in drawing distinctions courts previously used to relate expressive behavior to First Amendment values. Examples such as Jansson and Skala's essay and 2600.com suggest courts have not yet given this fact the weight it deserves. At the same time, the idea of limited distribution is less stable than it used to be, meaning that the types of assumptions courts brought to bear in tax protest cases are not reliable guides to decisions.

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[186] *Reimerdes* Transcript, *supra* note 9, at 622–23 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003). Johansen posted binary code written for the Windows operating system. When Johansen posted DeCSS, he had not played a DVD on a GNU/Linux computer, although he believed DVDs would play on that system. *Id.* at 635. He posted object instead of source code because DeCSS made use of Xing's player key (an algorithm recognized by DVDs as corresponding to a particular authorized player). Johansen worried that if he published the source code with Xing's key, that key would be revoked, Xing would be harmed, and the player he created using the Xing key would not work. *Id.* at 643.

[187] *Id.* at 963–64 (Testimony of Matthew Pavlovich, July 21, 2000).

[188] The narrow purpose to which LiViD was devoted suggests the Supreme Court may have spoken too broadly when it referred to "electronic mail (e-mail), automatic mailing list services ('mail exploders,' sometimes referred to as 'listservs'), 'newsgroups,' 'chat rooms,' and the 'World Wide Web' " as a single "unique medium." Reno v. ACLU, 521 U.S. 844, 851 (1997). There may be and probably are differences relevant to free speech analysis within and among these categories.

C. *General or Particular Content*

Expression of general ideas persuades by convincing the listener of things relevant to collective self-governance; expression of ideas about what is best for that person persuades without regard to the rest of society.[189] Expression of general ideas tends to advance First Amendment values more than expression about a particular person's circumstances.[190] The benefits of expression and therefore the costs of regulating it correlate with its generality.[191]

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[189] *See* CONSTITUTIONAL DOMAINS, *supra* note 24, at 164–69. Professor Greenawalt distinguishes between "ideological" and "non-ideological" appeals. GREENAWALT, *supra* note 24, at 117–18; 261–72. He describes "the line between nonideological and ideological solicitation" as being "roughly the line between telling somebody simply that some act will benefit him and telling him that it is his duty or his right, or will be of broad benefit, or is warranted within some overall philosophical understanding of human life and social change.") *Id.* at 271–72.

[190] Similar reasons justify the higher burden of proof imposed on public figures in dignitary tort cases. *See, e.g.*, Hustler Magazine, Inc. v. Falwell, 485 U.S. 46, 52 (1988); New York Times, Inc. v. Sullivan, 376 U.S. 254 (1964). Because they are commonly recognized, public figures often serve as the means for discussing more general matters of political interest or social interest, even if reports on such topics deal with very personal behavior. Implicitly or explicitly, readers and listeners tend to address media speech and speech regarding public figures as providing an occasion and subject for deliberation and dialogue. Reporting during President Clinton's terms comes to mind here. *See also* Sipple v. Found. for Nat'l Progress, 83 Cal. Rptr. 2d 677, 691 (Ct. App. 1999) (holding nationally known political consultant had to show actual malice in defamation action based on report of allegations that consultant beat his wife); Gilbert v. Nat'l Enquirer, Inc., 51 Cal. Rptr. 2d 91, 97–99 (Ct. App. 1996) (ruling high public interest in activities of public figures weighs in favor of dissolving preliminary injunction against husband wishing to describe allegedly poor mothering of his ex-wife, a well-known actress); Eastwood v. Superior Court, 198 Cal. Rptr. 342, 351 (Ct. App. 1983) (expressing "no doubt" that article describing alleged love triangle among celebrities was matter of public interest); Friedan v. Friedan, 414 F. Supp. 77 (S.D.N.Y. 1976) (article describing "life as a housewife" was a matter of public interest when written by prominent feminist); Carlisle v. Fawcett Publ'ns, Inc., 20 Cal. Rptr. 405, 413–15 (Ct. App. 1962). The court in *Carlisle* emphasized the need for care in a defamation action by the first husband of a person who later became a famous actress: "the accomplishments and way of life of those who have achieved a marked reputation or notoriety by appearing before the public such as actors and actresses, professional athletes, public officers, noted inventors, explorers, war heroes, may legitimately be mentioned and discussed in print or on radio or television."

[191] *See* Posner, *supra* note 124, at 11–12. Judge Posner usefully distinguishes between actual and potential audiences for information, noting that very technical information may have only a limited initial audience but a wide audience may exist for

As noted in the last section, in the past high publication costs limited widespread expression to large firms. Those costs also limited widespread expression to general-interest content that could attract enough demand to bear the costs. As a result, content with limited demand, either because it was too particular or because it seemed interesting only for illegal activity, fit awkwardly with general understandings of expressive conventions. A reader encountering a mass-market book would implicitly expect the book's content to address an audience at least widespread enough to justify the cost of publication.

That is one reason why books such as *Hit Man: A Technical Manual for Independent Contractors*,[192] *Advanced Techniques of Clandestine Psychedelic and Amphetamine Manufacture*, by Uncle Fester, and *The Construction and Operation of Clandestine Drug Laboratories*, by Jack B. Nimble,[193] seem odd. The content may be no more than instructions on how to break the law, an impression bolstered by the silly pen names, but the expense and notoriety of widespread publication and, for the latter two books, distribution through bookstores, a recognized channel of commerce for discourse, conflict with that impression.[194] Such books are an example of a more general point: When elements of social context such as the content and manner of distribution conflict, social practices and First Amendment values do not fit together very well, and we call the result a hard case.[195]

The low cost of publishing on the Internet makes it easier to distribute generally information that would not justify the cost of publication in a hard-copy world. One result is that a wider variety of information is available on

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the information in simplified form. On the other hand, for information such as that one is going for a walk tomorrow, both the actual and potential audiences are minute.

[192] Rice v. Paladin Enters., Inc., 128 F.3d 233 (4th Cir. 1997).

[193] Tattered Cover, Inc. v. City of Thornton, 44 P.3d 1044, 1049 (Colo. 2002).

[194] If an author actually intended to aid and abet crime, rather than engage in discourse, anonymous mail-order photocopies would seem more rational. *See* United States v. Barnett, 667 F.2d 835, 842–43 (9th Cir. 1982) (finding First Amendment no defense against aiding and abetting indictment based on mail-order sale of instructions on manufacturing drugs).

[195] For example, these books are publicly distributed works, not aimed at particular persons, but with minimal ideological content (particularly relative to things such as how to prevent a weapon from being traced), but which also are not solicitations. They therefore create situations Professor Greenawalt thought would be very uncommon, and they blur substantially the distinction between public and private expression that formed an important part of his analysis of the constitutional status of encouragements to crime. *See* GREENAWALT, *supra* note 24, at 116–18, 270–71. One may infer from this fact that the cost of publication played an implicit role in stabilizing the expectations on which Professor Greenawalt's analysis rests.

the Internet than is generally available in hard-copy form; supply and variety increased as cost decreased. Many sites post personal information, poetry, pictures of pets and friends, and the like. Others, such as bicycle clubs[196] or hobbyist organizations,[197] post for the world content that previously would have been distributed by newsletter or on a bulletin board.[198] One of the most famous early sites transmits images of a coffee pot from Cambridge University.[199]

Social understandings of what counts as expression of general interest are not fixed. With social friction low enough for any particular web page to be read widely at little cost, content that is nominally very particular can become a subject of common discourse. There is no particular reason why Newton the Rabbit's home page[200] cannot become a focal point for debates over animal rights, in much the same way a movie star's peccadilloes may become a means of discussing social and sexual morality.[201] The increase in limited-interest content on the Internet weakens one contextual element speakers and listeners use to orient themselves toward expression and makes it harder for courts to relate expression to First Amendment values.

D. *The Physical Setting of Expression*

Physical settings shape expressive practices and expectations, which affect an audience's understanding of what expression in those settings is for. Some settings, such as art museums, movie theaters, or perhaps a particular corner in a park, invite persons to view expressive conduct as presenting ideas for deliberation. To borrow an example from Professor Post, an ordinary urinal placed in a museum gallery may prompt a patron to consider the artistic form of commonplace objects, because the patron knows that galleries are a place for deliberation. The conflict between expectations derived from the conventions and practices associated with galleries and expectations of what urinals are for would itself generate deliberation. A

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[196] *E.g.*, Oakland Yellowjackets Bicycle Club, *at* http://www.oaklandyellowjackets.org/ (last visited Oct. 2, 2003).

[197] *E.g.*, Flying Model Airplane Club, *at* http://www.aeromaniacs.com/index.htm (last visited Oct. 2, 2003).

[198] *See generally* Reno v. ACLU, 521 U.S. 844, 851–52 (1997) (discussing role in public deliberation of Internet and related mediums such as newsgroups).

[199] Quentin Stafford-Fraser, *The Trojan Room Coffee Pot: A (non-technical) biography*, *at* http://www.cl.cam.ac.uk/coffee/qsf/coffee.html (last visited Oct. 2, 2002).

[200] Newton Gallery, *at* http://www.marblehead.net/newton/gallery.html (last visited Oct. 2, 2002).

[201] *See supra* note 190.

conventional urinal in the museum's restroom would not have a similar effect.[202]

Physical settings are not significant in the abstract. Courtrooms and museums tend to have lots of marble, high ceilings, and pillars, but they relate quite differently to speech. What matters are the social expectations and understandings associated with different settings, the practices such spaces foster, and the relationships of those practices to First Amendment values. These relationships are neither fixed nor neutral.[203] They are open to debate and change, including by legal analysis.[204] If the Court decides that air travelers or state-fair goers have a legitimate interest in being free from personal solicitation,[205] recognizing that interest will tend to reinforce and perpetuate the expectation. A contrary decision would have the opposite effect.

Sites on the Internet may lack the familiar social cues of physical space. Because of the low cost of publishing via a web page, sites may also lack the strong presumptive media role of newspapers or radio. To evaluate expression on the Internet, judges have to adapt traditional analysis to take into account the way the Internet alters social cues on which past decisions have relied.

Bernstein provides one example of such adaptation.[206] While the case was pending, Professor Bernstein sought permission to use his code in a course he was teaching at the University of Illinois at Chicago. The parties stipulated that Bernstein could post his code in connection with the class if he established a site that would reject user IP addresses other than those from the University of Illinois at Chicago network, would notify users that the site contained cryptographic software that could not be exported without a license, and would provide means for users to acknowledge this warning

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[202] Post, *Recuperating*, *supra* note 29, at 1254. Post notes that the deliberative value of a urinal "is made possible because artists and spectators share conventions that establish the medium of art exhibitions, and these conventions can by themselves generate forms of human interaction that are acknowledged as 'ideas' within the jurisprudence of the First Amendment." *Id.*

[203] CONSTITUTIONAL DOMAINS, *supra* note 24, at 177; FISH, *supra* note 24, at 116–17.

[204] *See* HARRY KALVEN, A WORTHY TRADITION 85 (Jamie Kalven ed., 1988) (noting interplay between social expectations and legal rulings).

[205] *See* Int'l Soc. for Krishna Consciousness, Inc. v. Lee, 505 U.S. 672, 689 (1992) (O'Connor, J., concurring in judgment) (airports); Heffron v. Int'l Soc. for Krishna Consciousness, Inc., 452 U.S. 640, 650 (1981) (state fair).

[206] Bernstein v. United States Dep't of State, 974 F. Supp. 1288 (N.D. Cal. 1997) (*Bernstein III*).

before using the site.[207]

Each of these measures created a form of friction separating Bernstein's course web site from the larger social world of the Internet. The stipulation is best understood as an effort to construct a stable set of conventions marking that site as deliberative in a sense similar to a classroom or a museum gallery, within which the parties agreed that Bernstein's code would be considered a form of academic expression.[208]

The district court's analysis of linking in *Reimerdes* is also a good illustration of this point. Corley posted DeCSS on his web site, which prompted the initial suit. He also linked his site to others posting DeCSS.[209] After his own posting was enjoined, he increased his efforts to use links to

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[207] *See* Stipulation for Teaching During the Spring 1997 Semester, Bernstein v. United States Dep't of State, 974 F. Supp. 1288 (N.D. Cal. 1997) (No. C 95-0582 (MHP)) (*Bernstein III*), *available at* http://Notabug.com/2002/cr.yp.to/export/1996/1004-cohn-2.txt (last visited Oct. 1, 2003).

[208] The Commerce Department's version of the export control regulations at issue in the case provides a different example of an effort to use social friction to distinguish academic study from unlawful conduct. The Commerce Department regulations permitted distribution without a license of code printed in hard-copy form while requiring a license for (and perhaps prohibiting) distribution of code in digital form. Bernstein v. United States Dep't of Justice, 176 F.3d 1132, 1138 (9th Cir. 1999), *reh'g en banc granted and opinion withdrawn*, 192 F.3d 1308 (9th Cir. 1999) (*Bernstein IV*). The basic logic turned on the cost of using code: the cost of executing code in digital form would be trivial, the cost of correctly typing and then using hard-copy code would be at least relatively high. The Department evidently hoped the difference in these costs would create friction helping to distinguish desirable from undesirable uses.

The district court said this aspect of the regulations was "irrational." *Bernstein III*, 974 F. Supp. at 1306. Sophisticated persons could convert printed code to functioning programs and sophisticated terrorists were the ones the government worried about. *Id.* This point is quite true, but it is also true that making it harder (costlier) to convert text into a program should reduce to some degree the probability that conversion will occur. Whether the policy made sense would depend on the cost of typing the printed code accurately, which presumably would be related to the length of the program. The incremental cost, and therefore the incremental deterrent effect, might or might not be very large, but the approach is not irrational.

[209] Links are "software instructions which, when executed, cause a signal to be sent to another location where data or material can be retrieved for viewing, copying or further transmission." Mot. to Modify the January 20, 2000 Order of Prelim. Inj. and for Leave to Amend the Compl., Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001) (No. 00-Civ-0277 (LAK)), *available at* http://www.eff.org (last visited Oct. 1, 2003). As this definition suggests, links may operate between web sites, within the same web site or, as with Jansson and Skala's essay, within a file. *See e.g.*, Mark Sableman, *Link Law Revisited: Internet Linking Law at Five Years*, 16 BERKELEY TECH. L.J. 1273, 1277 n.15 (2001).

establish his site as a portal for DeCSS.[210] The plaintiffs asked the district court to enjoin Corley's linking to DeCSS, as well as his posting of it.

The district court rightly perceived that links are critical in unifying the World Wide Web, making it easy (cheap) for users to share information.[211] Links are one of the main reasons why social friction on the Internet is so low, and why content can fly around the world with the speed that so worried both courts.[212] The district court (though not the Second Circuit) was sensitive to the need to consider linking in context, perhaps because of evidence that recognized media firms use links in their reporting.[213]

The district court's linking analysis considered how the context confronting a reader who executed a link would affect the reader's understanding of what the links were for, what she was doing by following them, and what to do with the content on the linked site. The court's analysis may be understood as an attempt to derive from the content of the linked site the sort of social cues regarding expression that physical spaces often provide.[214]

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[210] Corley responded to the injunction by taking down DeCSS and discussing the case on his web site. *Reimerdes*, 111 F. Supp. 2d at 312–13. He urged others to "[s]top the MPAA" by taking " 'a stand and mirror[ing] these files.' " *Id.* at 313. "Mirror" means to copy a file from another web site onto one's own web site. *Reimerdes* Transcript, *supra* note 9, at 808 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003).

[211] *Reimerdes*, 111 F. Supp. 2d at 340.

[212] For this reason, one could argue that the decisions in *Corley* amount to regulation of a medium of expression on the ground that the medium is too effective. Decisions such as *City of Ladue v. Gilleo* would seem to rule out such an approach. *See* City of Ladue v. Gilleo, 512 U.S. 43, 55 (1994) (striking down local ban on signs). Though plausible, the argument is unpersuasive. The characteristics of a medium have to be taken into account to the extent they affect the costs and benefits of protecting speech. (As we will see, for example, fighting words, incitement, and obscenity cases distinguish between written words and either verbal expression or images.) The mistake in *Corley* is that the courts failed to consider the initial story as part of public discourse, which would have required some form of incitement analysis, not that they attempted to regulate the Internet for its effectiveness.

[213] *See* Declaration of Emmanuel Goldstein (a/k/a Corley) in Opp'n to Pls.' Mot. to Modify the Prelim. Inj. and in Supp. of Defs.' Cross-Motion to Vacate the Prelim. Inj. at ¶ 21, Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001) (No. 00-Civ-0277 (LAK)).

[214] The district court found that Corley's links fell into three categories, corresponding to different levels of effort a user had to expend to download DeCSS, and to different types of content the link would present to the user on the journey to the file in

In ruling on the statutory question whether linking to DeCSS amounted to "trafficking" in circumvention technology, Judge Kaplan read the DMCA as imposing liability only on persons who intend to distribute circumvention technology.[215] He thought it obvious that linking one's web site to another site that automatically downloaded DeCSS amounted to trafficking in violation of the statute.[216] He thought the same was true of "hyperlinks to web pages that display nothing more than the DeCSS code or present the user only with the choice of commencing a download of DeCSS and no other content."[217]

The court found "[p]otentially more troublesome . . . links to pages that offer a good deal of content other than DeCSS but that offer a hyperlink for downloading, or transferring to a page for downloading, DeCSS."[218] The court thought it was not necessary to worry over that case in deciding the statutory question, however, because it found that Corley's linking was done for the purpose of distributing DeCSS.[219]

This analysis was sound as far as it went. With respect to the sites to which a link might direct a browser, it was good to take into account contextual factors providing clues to readers as to what role, if any, the link played in public discourse. Judge Kaplan's distinctions related sensibly to

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question. The court summarized the linking that had been done by the end of the proceedings:

> [T]he links that defendants established on their web site are of several types. Some transfer the user to a web page on an outside site that contains a good deal of information of various types, does not itself contain a link to DeCSS, but that links, either directly or via a series of other pages, to another page on the same site that posts the software. It then is up to the user to follow the link or series of links on the linked-to web site in order to arrive at the page with the DeCSS link and commence the download of the software. Others take the user to a page on an outside web site on which there appears a direct link to the DeCSS software and which may or may not contain text or links other than the DeCSS link. The user has only to click on the DeCSS link to commence the download. Still others may directly transfer the user to a file on the linked-to web site such that the download of DeCSS to the user's computer automatically commences without further user intervention.

Reimerdes, 111 F. Supp. 2d at 324–25.

[215] *Id.* at 341. DMCA creates liability only for persons whose acts evinced "a desire to bring about the dissemination" of circumvention technology; here he said "a strong requirement of that forbidden purpose is an essential prerequisite to any liability for linking." *Id.*

[216] *Id.* at 325.

[217] *Id.*

[218] *Id.*

[219] *Id.* at 325.

First Amendment values.[220] He said nothing about the context in which a link itself appeared (the linked-from rather than the linked-to site), however, and that is a serious deficiency.

As with the museum patron who sees expression in the gallery differently from expression in the restaurant, the context from which a reader approached DeCSS would affect her relationship to it, including her impression of what it was for. A reader following a link to or from the *New York Times* web page is more likely to approach DeCSS as a subject of deliberation than if the link were to or from a page listing movies that had been decrypted and were ready to steal.[221] (As noted earlier, the *Times* linked to 2600.com in connection with its reporting on the case.) None of the court's arguments justify ignoring that aspect of context.

E. *Understanding Expressive Intention*

As noted above, expression requires speakers to convey to listeners the idea that the speaker intends her actions to say something.[222] Speakers convey that intention by employing conventions and practices a listener can recognize as expressive. Recognizing a speaker's intention to engage in deliberative activity is therefore an important part of First Amendment analysis.

The social fluidity of the Internet complicates the task of analyzing a speaker's intention. Where social conventions are unstable, speakers employing them send weaker signals to audience members and fact-finders alike. Sometimes, as with Sklyarov, a speaker fails entirely, and his acts are not understood as expressive in any sense relevant to the First Amendment. Sometimes the lack of clear conventions and contexts makes it hard for courts to infer a speaker's intention from his behavior.

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[220] Judge Kaplan explained:

> In evaluating purpose, courts will look at all relevant circumstances. Sites that advertise their links as means of getting DeCSS presumably will be found to have created the links for the purpose of disseminating the program. Similarly, a site that deep links to a page containing only DeCSS located on a site that contains a broad range of other content, all other things being equal, would more likely be found to have linked for the purpose of disseminating DeCSS than if it merely links to the home page of the linked-to site.

Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 341 n.257 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001).

[221] *Id.* at 315 (noting web site listing 650 movies available for sale, trade, or free download).

[222] *See supra* text accompanying note 24.

Corley's posting of DeCSS illustrates this problem. The unusual nature of his web site and his editorial practices helped plaintiffs persuade the court that Corley's claims to journalism were a pretext to cover his trafficking. As we have seen, Corley exercised virtually no editorial control over his magazine or his web site.[223] He testified that his editorial indifference extended to DeCSS. He claimed at trial that when he posted DeCSS and a related story on the 2600 web page he neither knew nor cared whether the code actually decrypted DVDs. He cared only that DeCSS was an important topic of significant current interest to hackers, and that movie studios were already demanding that sites posting DeCSS take it down.[224] Whatever he thought about whether it worked, in November 1999 Corley posted a story about DeCSS, which was written by his webmaster.[225]

At trial, plaintiffs' counsel emphasized two portions of one sentence in the story. The first portion described DeCSS as a free DVD decoder; the second said DeCSS allowed users to copy DVDs.[226] Corley later said this was a mistake; he did not realize when he posted the story and code that

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[223] *See supra* text accompanying note 159.

[224] Corley testified:

> Q. When you posted DeCSS, did you know whether it would work or not?
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> A. No, I had no idea if it would work. The reason we posted the source code and the accompanying story is because it was already a story. I believe it had already been out a month at that point, and we saw this and the reaction to it, people having their web sites shut down, their pro Internet service providers being threatened, their schools being threatened, we saw that as a fascinating story, and we printed that story, we printed what the story was about, which was our source, our primary source, here is what they are talking about, here is the source code.
>
> Honestly, if someone had given me 20 random numbers and said this is the program, we would have printed the 20 random numbers, if that's what everybody was talking about. I have no knowledge if the program worked or not, but that wasn't the story. The story was the reaction it was causing.

Reimerdes Transcript, *supra* note 9, at 782–83 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003).

[225] *Id.* at 820. It is an indication of the mercurial nature of the web site and frictionless nature of Internet publication that Corley did not know his webmaster's real name. He corresponded with the webmaster by e-mail, knew the webmaster used the name Macki on the Internet, that his first name was Mike (or Micah), and that he was from California. Corley Dep. Transcript, *supra* note 164, at 32, 293.

[226] *Reimerdes* Transcript, *supra* note 9, at 809, 820 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003).

DeCSS decrypted DVDs, or that DVDs could be copied without DeCSS.[227] That bit of self-serving testimony aside, the statements in this sentence accurately reported facts about DeCSS that visitors to 2600.com probably would want to know. Indeed, if the second fact had not been true, the plaintiffs never would have sued.

There was more to the story than this sentence, however. The story identified the group responsible for DeCSS and said the decryption key was derived from the Xing player. The latter point was relevant because Xing had failed to encrypt the key, an example of very sloppy work. The story also blamed "the United States's notoriously antiquated encryption export laws that forced DVD manufacturers to use weak encryption (40 bit) in the first place."[228] The story ended with a reference to reports that "movie industry

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[227] *Id.* at 820–21.

[228] Here are the relevant portions of the story:

> The November 25, 1997 edition of Off The Hook (relevant portion 21 minutes into show), reported that DVD copy protection had been defeated. The method involved a C program that hooks into the device drivers from Zoran's SoftDVD player to intercept decoded DVD data. Two years later, the encryption itself has been cracked.
>
> Contents Scrambling System (CSS) is used in DVD copy protection to encode movies. Each DVD player, both software and standalone home theater systems, needs to have a key to decode the movie. Last week the Norwegian group Masters of Reverse Engineering (MoRE) discovered that the DVD player XingDVD did not encrypt its key for decrypting DVDs.
>
> As a result they were able to create DeCSS, a free DVD decoder, that not only facilitated the creation of previously unavailable open source DVD players for Linux, but also allowed people to copy DVDs. After the discovery of Xing's key they were able to derive over a hundred additional keys due to the weaknesses of the encryption algorithm. The ease in which this was accomplished can be blamed not just on Xing's sloppiness, but on the United State's notoriously antiquated encryption export laws that forced DVD manufactures to use weak encryption (40 bit) in the first place.
>
> In the last few days there have been numerous reports of movie industry lawyers shutting down sites offering information about DeCSS. 2600 feels that any such suppression of information is a very dangerous precedent. That is why we feel it's necessary to preserve this information. We do feel sympathy for the DVD industry now that their encryption has been cracked. Perhaps they will learn from this. We hope they apply that knowledge in a constructive way. If they choose to fall back on intimidation, we'll just have to deal with that.

DVD Encryption Cracked, 2600 MAGAZINE (Nov. 13, 1999), *at* http://www.2600.com/news/view/article/20 (last visited Oct. 1, 2003). The story was also attached as an exhibit to the Decl. of Bruce E. Boyden, Esq. In Supp. of Pls.' Application for a Prelim. Inj.,

lawyers" had tried to "shut down sites offering information about DeCSS" and said that such "suppression of information" prompted the magazine to try to "preserve the information."[229] Following the story, the magazine posted a link to a zip (compressed) file containing DeCSS. Anyone with a browser could go to the 2600 website and download a copy of the program, which they could then use as they wished. In keeping with his general editorial indifference, Corley did not know whether the file contained source or object code.[230]

The plaintiffs argued that Corley could have made any legitimate journalistic point without posting or linking to actual decryption programs.[231] The point of this argument was to persuade the court that Corley intended to traffic in DeCSS, not to engage in journalistic discourse. Corley maintained that posting the DeCSS code was integral to his story. He said the story would be judged by the quality of his proof that DeCSS was worth caring about, and the proof was in the code itself.[232] The following exchange from

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Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294 (S.D.N.Y 2000) (No. 00-Civ-0277 (LAK)), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000114_ny_mpaa_boyden_pi_decl.html (last visited Oct. 10, 2003).

[229] *Id.*

[230] Corley Dep. Transcipt, *supra* note 164, at 231. And, in keeping with his claim to be a journalist not a programmer, he testified that he did not know how to define object code. *Id.* at 233. A later story on the web site said it had at one point posted source code. *See 2600 Website Hit With Injunction: update 1/22/00*, 2600 MAGAZINE, *at* http://www.2600.com/news/display.shtml?id=332 (last visited Oct. 10, 2003).

[231] For example, in a supplemental brief dealing with free speech issues, requested by the Second Circuit after oral argument, plaintiffs argued that "the injunction against Corley does not extend to his advocacy, which has been and continues to be extensive. It is aimed instead, with laser-like precision, at his unlawful provision of DeCSS to the public; only that is restrained." MPAA Supplemental Brief, Question 7, *Reimerdes*, 111 F. Supp. 2d 294 (No. 00-Civ-0277 (LAK)). This argument simply presumes that "advocacy" and "trafficking" are distinct, and that the latter may be restrained without affecting the former, which are among the points at issue.

[232] Corley testified:

> Q. Is it your testimony that you did that as a journalist to write a story?
>
> A. That's correct.
>
> Q. Could you have written the identical story without the posting, using the letters DeCSS as many times as you wanted in the story?
>
> A. Not writing a story that would have been respected as a journalistic piece, no, because in a journalistic world, you have to pretty much put up or shut up. You have to show your evidence. . . . So in this particular case, we pointed to the evidence itself which was already firmly established out there in the Internet world. We just put it up on our site so we could write our perspective on it and show the world what

cross-examination fairly summarizes each view:

> Q. Couldn't you have written the same story using the same exact words and using DeCSS without going out and getting DeCSS and posting it?
>
> A. No. It would not have been the same story. It is analogous to printing a story about a picture and not printing the picture. People want to see what you are talking about.[233]

Corley rejected the charge that he posted DeCSS so people could use it for piracy, saying that would have been pointless because anyone could download the code from countless other sites,[234] and that if he had intended only to traffic in the code he would have done so "surreptitiously." [235]

The district court did not resolve this debate with regard to Corley's

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it was all about. . . .

Reimerdes Transcript, *supra* note 9, at 823–25 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003).

[233] *Id.* at 824–25. Corley had the better argument in this exchange. For at least some and perhaps most of his readers, posting the code probably strengthened the English-language text of Corley's story. If nothing else, persons conversant in code could tell whether DeCSS supported the story's claims that the Xing player was sloppily done and that U.S. export policy hamstrung the work of DVD manufacturers. In addition, the efforts of various movie studios to stop the spread of DeCSS were newsworthy. The question whether DeCSS posed an actual threat of piracy was relevant to that story, and the code to DeCSS—source code and object code—was relevant to verifying whether the threat was in fact severe. The code also could inform debate on whether it had anything to do with making a player for the GNU/Linux operating system or was just a tool for pirates.

[234] Corley Dep. Transcript, *supra* note 164, at 218–19. Corley testified:

> Q. Is it true or is it not true that the main reason you put "DeCSS" in the stories and editorials you wrote on your web site was that so people could go to the web site and download DeCSS, the entire program? . . .
>
> A. No, that's not the reason. If people wanted to download DeCSS, there were hundreds of sites they could do it from. They could go to any search engine and find it that way.
>
> Q. Why did you have to make it possible for them to go to yours and pick it up?
>
> A. Because we're a newsletter and this was a bit of news that affected people who read our magazine. It was of interest to people who read our magazine. And we felt compelled to cover it, and covering it includes giving as many details as we can.

Id.

[235] *Id.* at 278.

initial posting of the code. The closest Judge Kaplan came to commenting on Corley's intention and the context in which he posted the code was to say Corley had "touted" DeCSS "as a way to get free movies."[236] The balance of his opinion discussed only regulation of the code itself.[237] The facts just reviewed show that this is not a fair description of the context in which Corley first posted DeCSS.[238]

Both the district court and Second Circuit gave too little weight to Corley's claim that his subjective intention in posting DeCSS was to report a newsworthy event. The content of the story, and its posting on a site affiliated with a magazine with a significant hard-copy circulation,[239] support Corley's claim, however. These facts suggest that the context in which the story was presented would allow persons reading the story to orient themselves toward it as it was intended—as a news story reporting on events of concern to at least technically sophisticated persons.

As noted earlier, speakers convey messages by signaling to listeners that the speaker intends to convey the message.[240] By employing recognizably journalistic practices and somewhat less recognizably journalistic contexts, that is what Corley did. In analyzing the expressive significance of his actions, the courts should have taken his intention more seriously than they did.

The opposite is true of Corley's linking. Corley responded to the injunction by taking down DeCSS and discussing the case on his web site.

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[236] Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 341 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001).

[237] *Id.* at 326–30. This point is most easily seen in Judge Kaplan's alternative holding that the DMCA was constitutional as applied to Corley even if the statute was analyzed as a content-based regulation. That holding discusses only the expressiveness of the code, not the context in which Corley posted it. *Id.* at 333 n.216. To be fair to Judge Kaplan, the defendants' post-trial memorandum argued at length that DeCSS was protected speech and made no real effort to analyze the context in which Corley used the code. The Second Circuit, on the other hand, had no such excuse. It asked for additional briefing on free speech issues, and the defendants' supplemental brief argued that "The dissemination of DeCSS, here by a member of the media covering an issue of public concern, is pure speech." MPAA Supplemental Brief, Question 3, *Reimerdes*, 111 F. Supp. 2d 294 (No. 00-Civ-0277 (LAK)).

[238] At least with respect to that initial story (though, not with respect to Corley's linking), this conclusion was clearly erroneous. Under the standards of review applicable in First Amendment cases, the Second Circuit should have disregarded it. Boy Scouts of America v. Dale, 530 U.S. 640, 648–49 (2000) (noting plenary appellate review of facts in First Amendment cases); Bose Corp. v. Consumers Union of United States, Inc., 466 U.S. 485, 499 (1984) (holding same).

[239] *See supra* note 150.

[240] *See supra* note 24.

He warned that he "could be forced into submission" and urged others to "[s]top the MPAA," helpfully suggesting that "it's especially important that as many of you as possible, all throughout the world, take a stand and mirror these files."[241] From the time he first posted DeCSS, Corley had provided on his webpage a form that could be used to submit links to pages on which others had posted DeCSS. His post-injunction plea and the notoriety of the case had an effect, however. Within a few days after the injunction his site added over 100 links to other sites posting the code.[242] These facts led the court to conclude that Corley had tried to ensure that the case would not stop the proliferation of DeCSS.[243]

Insofar as Corley's intention was concerned, Judge Kaplan was wrong to say that Corley's posting and linking were essentially the same thing.[244] Plaintiffs offered strong evidence suggesting that after Corley was sued he did his best to facilitate the spread of DeCSS across the Internet for its own sake, with no connection to the deliberative content of his original story.[245] Hog-wild copying as a means of thumbing one's nose at large media firms evinces no more an intention to engage in public discourse than did Sklyarov's "expressive" sale of AEBPR.[246]

The court's analysis of Corley's links, other than the initial link to illustrate the story, was sound because Corley himself was indifferent to the expressive contexts to which he linked. Corley may have thought copying was itself a message, but that is wrong. The free speech significance of linking derives from the circumstances in which that practice occurs. If a link does nothing but copy, then the value of the link derives from the copied content. If DeCSS was to be considered abstractly, as Corley's undifferentiated linking implies it should, then the courts' functional analysis was appropriate.

The point of this analysis is not only that the courts in *Corley* were half-wrong about Corley's intention. It is that the courts were right on linking, where his intention and practices aligned and were easy to categorize, and

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[241] *Reimerdes*, 111 F. Supp. 2d at 313. "Mirror" means to copy a file from another web site onto one's own web site. *Reimerdes* Transcript, *supra* note 9, at 808 (Test. of Eric Corley, July 20, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000720_ny_trial_transcript.html (last visited Oct. 1, 2003).

[242] Corley Dep. Transcript, *supra* note 164, at 256.

[243] *Reimerdes*, 11 F. Supp. 2d at 313 ("[D]efendants obviously hoped to frustrate plaintiffs' recourse to the judicial system by making effective relief difficult or impossible.").

[244] *Id.* at 339.

[245] *Id.* at 312–13.

[246] *See supra* note 45.

wrong on the initial posting of the code, where the elements of social context—including the lack of social friction that made world-wide copying of the code in contexts unrelated to public discourse a serious risk—produced a more ambiguous picture.

The lack of clear and stable conventions regarding sites such as 2600.com, or Jansson and Skala's web pages, complicates analysis of a speaker's expressive intention. In both cases, courts overlooked legitimate claims that part of the conduct before them was intended as a contribution to public deliberation. The cases therefore stand in part as examples of the need for more discriminating analysis in the future.

IV. IMPLICATIONS AND RECOMMENDATIONS

This Part relates the preceding discussion of context to First Amendment doctrine, and offers recommendations for applying that doctrine in cases involving expressive uses of code. I argue first that courts generally should reject facial challenges to regulations that apply to a set of technologies including code. They should instead adopt a common-law approach and deal with applications of legal rules to particular uses of code. I then argue that incitement doctrine should be adapted to deal with problems created by the lack of social friction on the Internet. Finally, I suggest that content neutrality may be less significant in cases involving code than in some other contexts

A. *Reject Facial Challenges in Favor of Decisions Based on Concrete Facts*

Courts sometimes review free speech challenges to the terms of a statute, rather than to its application to a particular party. In such cases, the statute may be invalidated if its terms apply to a significant amount of constitutionally protected activity, even if the statute might be constitutional as applied to the party before the court.[247]

Facial challenges based on overbreadth make sense where courts understand how a statute will affect protected speech. As noted above, however, such understandings traditionally have been based on relatively stable expressive practices and conventions whose significance for First Amendment values is relatively clear. Where expressive contexts are ambiguous, or where practices and conventions are fluid, it is much harder for judges to make reliable predictions about how a statute will apply to and affect expressive behaviors.

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[247] Ashcroft v. ACLU, 535 U.S. 564, 584 (2002) (noting substantial overbreadth requirement); Broadrick v. Oklahoma, 413 U.S. 601, 615 (1973) (noting same).

For example, it may well be, as Judge Nelson argued in *Bernstein*, that most cryptographic code is not used in ways that advance First Amendment values.[248] That does not mean that Bernstein himself had no claim—even Judge Nelson intimated that he had a good one.[249] It does mean the regulations were probably not substantially overbroad and did not evince a censorious motive justifying prior restraint analysis of the regulations as a whole.

The relatively formal analysis undertaken by the district court and the Ninth Circuit made for easier decisions in that case but, as both courts recognized, did not reach the substantive questions presented by Bernstein's academic use of code.[250] It would have been far more productive for both the district court and the Ninth Circuit to take Bernstein's academic use of code head-on and rule on the regulations as applied to him.

This point applies generally. Only through such fact-intensive, context-specific analysis will courts begin to develop a coherent body of precedent regarding code and the freedom of speech. In part that analysis will take the form of adapting contextual cues from the physical world to cyberspace. The *Bernstein* court's treatment of his classroom webpage and the *Corley* courts' concern for newspaper linking are examples of such adaptation. In part the analysis will require courts to relate new practices and conventions to First Amendment values.

Case-by-case analysis is no guarantee that courts will get it right. The analysis of Corley's posting of DeCSS is flawed even though the decision followed a trial on the merits. But even there the flaw lies more in failing to probe deeply enough into expressive context, a problem made worse in cases where courts entertain facial challenges.

B. *Give Great Weight to the Deliberate Nature of Unlawful Uses of Code*

Expression that would normally enjoy constitutional protection may

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[248] Bernstein v. United States Dept. of Justice, 176 F. 3d 1132, 1147–49 (9th Cir. 1999), *reh'g en banc granted and opinion withdrawn*, 192 F.3d 1308 (9th Cir. 1999) (*Bernstein IV*).

[249] *Id.* at 1149.

[250] The district court saw its ruling as fairly narrow, and chided the parties for arguing as if invalidating a prior restraint for lack of procedural safeguards determined every free-speech question concerning the regulation of code. Bernstein v. United States Dep't of State, 974 F. Supp. 1288, 1303 (N.D. Cal. 1997) (*Bernstein III*). The Ninth Circuit stressed the narrowness of its ruling as well. Bernstein v. United States Dep't of Justice, 176 F.3d 1132, 1145 (9th Cir. 1999), *reh'g en banc granted and opinion withdrawn*, 192 F.3d 1308 (9th Cir. 1999) (*Bernstein IV*).

sometimes be regulated on the ground that it threatens such immediate harm that the only way to avoid the harm is to regulate speakers rather than listeners. The line of cases running from *Schenk* to *Brandenburg* articulates various verbal formulations of this idea.[251] The current formulation says "advocacy" may be regulated when it is "directed to inciting or producing imminent lawless action and is likely to incite or produce such action."[252] *Brandenburg* does not command courts to take the magnitude of harm into account, but common sense and a desire for thorough analysis suggest that, as a practical matter, it should be.[253]

The "lawless action" at issue in incitement cases tends to be a risk of violence of some sort, but there is no particular reason it could not refer to economic lawlessness as well. Incitement doctrine best captures the main concern courts have expressed in code cases—that code will be used to cause harm—and therefore is an appropriate doctrinal vehicle for dealing with the consequences of protecting expression involving code.

Incitement doctrine only applies to expression that would be protected speech but for the threat of immediate harm. Expression not protected by the First Amendment may be regulated without any concern for whether the ill effects the regulation tries to avoid will occur immediately or in some distant future.[254] Incitement analysis therefore must proceed in two steps. Expression first must be analyzed to see whether it enjoys constitutional protection without regard to incitement. (Unfortunately, this turns in part on how closely expression is bound up with an unlawful act.)[255] If not, the analysis ends. If so, then one must analyze the relationship between the expression and the harm it is said to threaten.

The cases we have analyzed thus far illustrate this difference. Incitement analysis is irrelevant to the trading software in *Vartuli*, Sklyarov's AEBPR, Jansson and Skala's cphack.exe, and Corley's post-litigation exhortations to

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[251] For a summary of this evolution, *see* KALVEN, *supra* note 204, chs. 9–16.

[252] Brandenburg v. Ohio, 395 U.S. 444, 447 (1969).

[253] Posner, *supra* note 124, at 34–36.

[254] *See* Rice v. Paladin Enters., Inc., 128 F.3d 233, 249–50, 262 (4th Cir. 1997); United States v. Knapp, 25 F.3d 451, 457 (7th Cir. 1994); United States v. Mendelsohn, 896 F.2d 1183, 1185–86 (9th Cir. 1990) (The trial court refused to give a *Brandenburg* instruction to a defendant convicted of unlawful transport of a betting program; noting "[a]lthough a computer program under other circumstances might warrant First Amendment protection, SOAP does not. SOAP is too instrumental in and intertwined with the performance of criminal activity to retain first amendment protection."); United States v. Freeman, 761 F.2d 549 (9th Cir. 1985) (discussing the limits of First Amendment defenses to aiding and abetting indictment); GREENAWALT, *supra* note 24, at 262.

[255] *Freeman*, 761 F.2d at 551–52.

distribute DeCSS through indiscriminate linking. Though each example involved expression, the practices they implemented were too peripheral to First Amendment values to justify bringing *Brandenburg* into the picture.

In contrast, Bernstein employed Snuffle in a way that advanced First Amendment values. The same is true of Jansson and Skala's essay and illustrative programs, and Corley's story and initial posting of DeCSS. As applied to such uses, regulations should be reviewed under *Brandenburg*. The issue was not raised in *Bernstein* because the courts opted for a prior restraint theory. That the issue was not raised in either *Microsystems* or *Corley* suggests parties and judges need to be more sensitive to incitement analysis in such cases.

Three variables are particularly relevant to incitement analysis in cases involving code. The first is the difficulty (cost) of using expression for unlawful purposes. The second is whether listeners have time to consider and deliberate upon expression or whether their wills are overborne by circumstance. The third is whether the speaker intended her use of code to incite unlawful acts. The first two variables will tend to point in opposite directions in cases involving expressive uses of code on the Internet. The third is conceptually indeterminate and provides no easy doctrinal answers.

1. *The Cost of Using Expression Unlawfully*

The opinions in *Corley* are an excellent example of how courts in code cases risk letting the low level of social friction on the Internet, and the correspondingly high risk that expression involving code will be used unlawfully, blind them to the benefits of such expression and the role it might play (if courts allow it to) in public discourse.

As we have seen, Judge Kaplan worried that the absence of social friction on the Internet implied widespread distribution of DeCSS.[256] This concern dominated his free speech analysis. Judge Kaplan saw the key doctrinal issue as being whether the DMCA regulated DeCSS based on its content. He answered that question by saying Congress passed the DMCA because it worried that the distribution of circumvention technology would lead to rampant piracy.[257] Judge Kaplan thought this concern over piracy was a concern over the functional aspects of code rather than any ideas code

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[256] *See supra* note 127.

[257] Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 329 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001) ("The reason that Congress enacted the anti-trafficking provision of the DMCA had nothing to do with suppressing particular ideas of computer programmers and everything to do with functionality.").

might express, and concluded the DMCA is a content-neutral regulation of speech.[258]

Judge Kaplan therefore reviewed both the statute and its application to Corley under the relatively lenient standards that apply to content-neutral regulations.[259] He thought the DMCA passed this test because, due to the low level of social friction on the Internet and the attendant high probability that DeCSS would be distributed widely, DeCSS presented a high risk of piracy. He saw that risk as a serious concern unrelated to the expressive use of DeCSS. He saw the DMCA as a sensible response to these new risks rather than as an assault on free speech values.[260]

Not surprisingly, Judge Kaplan's constitutional analysis turned on the relationship between DeCSS and piracy, which he termed causation:

> Here, dissemination itself carries very substantial risk of imminent harm because the mechanism is so unusual by which dissemination of means of circumventing access controls to copyrighted works threatens to produce virtually unstoppable infringement of copyright. In consequence, the causal link between the dissemination of circumvention computer programs and their improper use is more than sufficiently close to warrant selection of a level of constitutional scrutiny based on the programs' functionality.[261]

The court felt strongly enough on this point to hold in the alternative that the DMCA was constitutional even if analyzed as a content-based regulation applied to Corley.[262]

Indeed, ascertaining the cost of using DeCSS to steal movies seems to have been the only reason the court sat through six days of trial; most of the facts relevant to the DMCA were undisputed.[263] The court found that it cost virtually nothing to download DeCSS and it cost very little to decrypt a movie on one's own computer.[264] Because it was cheap to use DeCSS to

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[258] *See id.*

[259] Such a regulation is constitutional if "it furthers an important or substantial governmental interest; if the governmental interest is unrelated to the suppression of free expression; and if the incidental restriction on alleged First Amendment freedoms is no greater than is essential to the furtherance of that interest." Turner Broad. Sys., Inc. v. F.C.C., 512 U.S. 622, 662 (1994) (citation omitted).

[260] *Reimerdes*, 111 F. Supp. 2d at 331.

[261] *Id.* at 332.

[262] *Id.* at 333 n.216.

[263] *Id.* at 345 n.279 (noting the only real disputed factual issue was "the speed with which decrypted files could be transmitted over the Internet and other networks").

[264] *Id.* at 313 (noting that downloading DeCSS took plaintiffs' expert only seconds and decryption took 20 to 45 minutes).

decrypt a movie, it was logical to conclude that most users would perceive decryption as being something DeCSS was for. That was one reason the district court thought it obvious that DeCSS would be employed for piracy.[265] (On the other hand, the record suggested that piracy was costly,[266] and one wonders why the court did not put more weight on this fact, but the court's basic logic was sound.)

The Second Circuit followed the same approach, expressing its worries by saying three times in one paragraph that the operation of code was "instant" or "instantaneous,"[267] and later that distribution of DeCSS "enables the initial user to copy [a] movie in digital form and transmit it instantly in virtually limitless quantity, thereby depriving the movie producer of sales.

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[265] *Id.* at 331. The court stated: "Given the virtually instantaneous and worldwide dissemination widely available via the Internet, the only rational assumption is that once a computer program capable of bypassing such an access control system is disseminated, it will be used." The court went on to say that "[e]very recipient is capable not only of decrypting and perfectly copying plaintiffs' copyrighted DVDs, but also of retransmitting perfect copies of DeCSS and thus enabling every recipient to do the same." *Id.* This conclusion makes sense only if the cost of using DeCSS is low and persons receiving the code understand piracy as something DeCSS is for.

[266] The evidence was that using DeCSS for piracy was more costly than simply downloading that program or decrypting a movie at home. A decrypted movie transmitted over the Internet needed work before it would play properly. (The sound and video had to be re-synchronized.) *E.g.*, *Reimerdes* Transcript, *supra* note 9, at 49–52 (Test. of Michael Shamos, July 17, 2000), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000717_ny_trial_transcript.html (last visited Sep. 29, 2003). The total process of stealing the *Matrix* took Dr. Shamos and his assistant about 20 hours, many of which were spent on the synchronization problem. 111 F. Supp. 2d at 313. Defendants argued that these costs undercut the plaintiffs' claim that DeCSS would harm them. *E.g.*, Defs.' Post-Trial Mem. of Law, Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 294 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001) (No. 00-Civ-0277 (LAK)), *available at* http://www.eff.org/IP/Video/MPAA_DVD_cases/20000808_ny_post_trial_brief.html (last visited Sept. 29, 2003). The district court was very attentive to the issue, understanding that how DeCSS affected the plaintiffs' business depended on how costly it was to use DeCSS for piracy. 111 F. Supp. 2d at 315. It concluded that using DeCSS for widespread piracy was feasible, and therefore presented a significant risk (expected cost) to the plaintiffs. In this regard, the court pointed out that once a stolen decrypted file was properly synchronized, that synchronized file could be copied cheaply to CD-rom disks, which themselves cost only a dollar. *Id.* at 314. Whatever one thinks of this conclusion, it is right to say that the probability of a particular use is related to its cost, and one reason for this is that the cost of use is relevant to a reader's perceptions.

[267] *See Corley*, 273 F.3d at 451 ("[C]omputer code can *instantly* cause a computer to accomplish tasks and *instantly* render the results of those tasks available throughout the world via the Internet. The only human action required to achieve these results can be as limited and *instantaneous* as a single click of a mouse." (emphasis added)).

The advent of the Internet creates the potential for instantaneous worldwide distribution of the copied material."[268] Counting quotations from the district court's opinion, the word "instant" or some variant appears sixteen times in the Second Circuit's opinion, each time emphasizing that content, such as DeCSS or a copied movie, could move from one computer around the world in a matter of minutes.[269]

The low level of social friction on the Internet swamped the legitimate free speech interests at stake in the case. Both the district court and the Second Circuit noted that Corley ran a magazine and saw his posting of DeCSS as a journalistic endeavor,[270] but neither court analyzed his posting of the code in connection with his story. Nor did either court justify its choice to look only at DeCSS, disregarding the story and the relationship of the website to Corley's magazine.

The Second Circuit's omission is particularly striking, because it correctly distinguished *Vartuli* on the ground that the manner in which the code was marketed and used in that case did not position the code socially in a way that its use advanced "the values served by the First Amendment."[271] Both courts seem implicitly to have held that the close connection they found between posting and piracy justified analyzing DeCSS on its own rather than in the context of Corley's story or his magazine.

Courts do not ordinarily analyze First Amendment issues by looking only at the expression to which a plaintiff objects and ignoring the balance of a work or the context in which it is presented. In cases involving defamation or obscenity, for example, courts consider the entirety of a publication.[272] The

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[268] *Id.* at 453.

[269] For example, the court stated:

> As they have throughout their arguments, the Appellants ignore the reality of the functional capacity of decryption computer code and hyperlinks to facilitate instantaneous unauthorized access to copyrighted materials by anyone anywhere in the world. Under the circumstances amply shown by the record, the injunction's linking prohibition validly regulates the Appellants' opportunity instantly to enable anyone anywhere to gain unauthorized access to copyrighted movies on DVDs.

Id. at 457.

[270] *Reimerdes*, 111 F. Supp. 2d at 309; *Corley*, 273 F.3d at 439.

[271] *Corley*, 273 F.3d at 449 (citing Commodity Futures Trading Comm'n v. Vartuli, 228 F.3d 94, 111 (2d Cir. 2000)).

[272] There is a fair amount of jurisprudence dealing with the role of context in determining whether expression conveys a false statement of fact for purposes of defamation. *See* Milkovich v. Lorain Journal Co., 497 U.S. 1 (1990) (reviewing constitutional limitations on defamation claims); Hustler Magazine, Inc. v. Falwell, 485

same is true for classifying content as commercial speech.[273] Justice Brandeis insisted on this point in connection with the sedition cases in the early twentieth century,[274] and he was right. The courts' decision to deal only with DeCSS and ignore the story with which it was connected departed from traditional free speech principles and therefore demanded justification, which neither court provided.

Taking Corley's story and magazine into account, the closest analogy to his case is *Kois v. Wisconsin*.[275] In that case, an "underground" newspaper ran a story about one of its photographers, who had been arrested for possessing obscene material. The story described the arrest and included two relatively small pictures of a nude man and woman embracing each other. The story said these pictures were similar to those for which the photographer had been arrested.[276] The gist of the story was that the police were harassing the newspaper. The editor was convicted of disseminating obscene material[277] and sentenced to two years in jail.

The Supreme Court reversed the conviction, holding that the article was not "a mere vehicle for the publication of the pictures" because the pictures were "relevant to the theme of the article."[278] The Court found it "unnecessary to consider whether the State could constitutionally prohibit the

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U.S. 46, 57 (1988) (noting that libel claim failed when jury found ad parody could not be taken as assertion of fact); Greenbelt Coop. Publ'g Ass'n., Inc. v. Bresler, 398 U.S. 6, 13–14 (1970) (emphasizing importance of context in defamation cases). There is a related line of cases regarding obscenity. *See* Ashcroft v. Free Speech Coalition, 535 U.S. 234, 246 (2002) (citing Miller v. California, 413 U.S. 15 (1973)) (ruling to show obscenity, "government must prove that the work, taken as a whole, appeals to the prurient interest, is patently offensive in light of community standards, and lacks serious literary, artistic, political, or scientific value.").

[273] *E.g.*, Post, *Commercial Speech*, *supra* note 173, at 18.

[274] Schaefer v. United States, 251 U.S. 466, 483–84 (1920) (Brandeis, J., dissenting):

> The nature and possible effect of a writing cannot be properly determined by culling here and there a sentence and presenting it separated from the context. In making such determination, it should be read as a whole; at least if it is short like these news items and editorials. Sometimes it is necessary to consider, in connection with it, other evidence which may enlarge or otherwise control its meaning or which may show that it was circulated under circumstances which gave it a peculiar significance or effect.

Id.

[275] 408 U.S. 229 (1972).

[276] *Id.* at 230.

[277] The obscene material included a poem as well as the pictures. *Id.* at 231–32.

[278] *Id.* at 231.

dissemination of the pictures by themselves, because in the context in which they appeared in the newspaper they were rationally related to an article that itself was clearly entitled to the protection of the Fourteenth Amendment."[279]

If the Second Circuit had applied this standard, it would have had to consider both Corley's story and his posting of DeCSS, for the posting was certainly "rationally related" to the story, which even the plaintiffs seemed to admit was protected speech.[280] Because the story and Corley's magazine are contextual elements that affect how readers would orient themselves toward his posting of the code, and because that orientation affects the probability that code downloaded from his site would be used unlawfully, the courts' refusal to consider the context of posting undermined the probability-based analysis in which they engaged.

As the analysis in *Corley* suggests, the low cost of manipulating and using digital content will tend to narrow the distance judges perceive between expression as a tool for discourse and expression as a tool for something else. Digital content in general, and code in particular, will seem more "performative" on the Internet than hard-copy expression has seemed in the past. The lack of social friction on the Internet will tend to increase the probability and magnitude of harm from code such as DeCSS.

In such cases, the expected social cost of expression involving code is a legitimate consideration. Though this same lack of friction implies higher benefits from such expression as well, the opinions in *Corley* support my hunch that risk-averse judges will focus more on the expected costs than benefits. In Internet cases involving code, therefore, this element will tend systematically to favor regulation of code.

2. *Time for Deliberation*

There are no modern incitement cases affirming convictions involving printed material.[281] There are no fighting words cases affirming convictions or upholding liability based on printed materials.[282] There are no modern obscenity cases affirming convictions or upholding liability based on words instead of images.[283] These facts point to the importance First Amendment

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[279] *Id.*

[280] *See supra* text accompanying notes 223–27.

[281] To update this statement for the digital age, there are no modern incitement cases upholding convictions based on material fixed in a tangible medium.

[282] *See e.g.*, Cohen v. California, 403 U.S. 15, 20 (1971) (rejecting the argument that jacket stating "Fuck the Draft" amounted to fighting words on ground that it was not directed to a particular hearer).

[283] *Cf.* Posner, *supra* note 124, at 39 ("The ratio of information to emotional arousal

doctrine attaches to the process of deliberation—the engagement of the listener's reason with expression.

Within the domain of public discourse, a significant aim of free speech doctrine is to protect the process of deliberation and engagement with ideas. Over time, the doctrine has shifted the responsibility for obeying the law from speakers to listeners.[284] Otherwise protected expression may be regulated where circumstances suggest it may circumvent or overwhelm ("set fire to," in Justice Holmes's phrase) reason and deliberation, but not otherwise.[285]

Words are treated differently from verbal expression and images because reason is less likely to be overcome by reading than by listening to a speech. Reading invokes reason more directly than listening, and it provides an opportunity to put a text away and calm down when angered.[286] Reading may be done in the privacy of one's home, about as far away as possible from the social pressures necessary to sustain an indictment for incitement. Whatever harm comes from reading is mediated by rational processes, and within the domain of public discourse it is a central mission of the First Amendment to let those processes operate freely.[287]

What remains of incitement doctrine is a risk of liability for verbal expression in circumstances where the law is willing to say listeners cannot help themselves. When the mob is frenzied and action is easy, the law views the mob as a gun and allows a speaker to be punished for pulling the

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is greater in the print than in the other media.").

[284] *See* Ashton v. Kentucky, 384 U.S. 195 (1966) The court in Ashton stated:

> [T]o make an offense of conduct which is "calculated to create disturbances of the peace" leaves wide open the standard of responsibility. It involves calculations as to the boiling point of a particular person or a particular group, not an appraisal of the nature of the comments per se. This kind of criminal libel "makes a man a criminal simply because his neighbors have no self-control and cannot refrain from violence."

Id. at 200 (quoting ZACHARIAH CHAFEE, FREE SPEECH IN THE UNITED STATES 151 (1954)). For a description of this evolution, *see* KALVEN, *supra* note 204, chs. 9–16.

[285] Gitlow v. New York, 268 U.S. 652, 673 (1925) (Holmes, J., dissenting).

[286] Alternatively, one could take out one's aggressions on the book. As a policeman in Burma, George Orwell subscribed to the English literary magazine Adelphi. He was often disgusted by its contents, on which occasions he would prop it against a tree and shoot it with his rifle. ORWELL REMEMBERED 140 (Audrey Coppard & Bernard Crick eds. 1984) (recollection of Jack Common).

[287] Judge Easterbrook made this point well in *Am. Booksellers Ass'n v. Hudnut*. *See* Am. Booksellers Ass'n v. Hudnut, 771 F.2d 323, 329–30 (7th Cir. 1985). The case dealt with an anti-pornography ordinance, meaning that his emphasis on reason applied to images as well as words. *See id.*

trigger.[288] Indeed, the classic example of incitement from J.S. Mill involves an enraged mob standing before a corn-dealer's house while a speaker denounces corn-dealers as starvers of the poor.[289] The speaker is liable in such situations only if his words produce immediate action; otherwise the frenzy subsides and the words become feeble. A speaker could not be held liable if the mob went home, re-formed a day later, and then burned down the corn-dealer's house.

Code published on the Internet does not fit this model at all. The "pirates" who so worry rights-holders and the courts in *Corley* may download decryption technology as they please, in the comfort of their homes. They may store the code, so it does not disappear. They may decide at their leisure whether and how to use it. They could even use it while doing something else, such as watching television or talking on the telephone. They have time to think through their actions and exercise restraint. Their wills are not overborne. If they choose to steal movies or records, they are thieves, not thoughtless members of a frenzied mob.

The *Corley* courts did not have to confront this point because they did not apply incitement principles to Corley's story. Had they done so, this point would have undercut significantly the force of their ceaseless repetition that DeCSS could be copied and sent around the world "instantly." That is true, but piracy did not follow instantly from copying DeCSS, and the

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[288] There are few cases fitting these facts. For a case finding that a criminal information stated, at least, a colorable crime, see *People v. Upshaw*, 741 N.Y.S.2d 664 (N.Y. Crim. Ct. 2002). *Upshaw* involved an indictment for inciting a riot against three men who, on September 14, 2001, went to 42nd Street near Times Square and aggressively praised the terrorist attacks of September 11, 2001. *Id.* at 666. The defendants allegedly:

> shouted at a gathering crowd of approximately fifty people in praise of the terrorist attack and the resulting deaths of police officers, firefighters, and civilians; vehemently expressed their shared disappointment that the carnage had not been greater; and accosted people in the crowd, yelling in the onlookers' faces, "We've got something for your asses."

Id.

[289] J.S. MILL, ON LIBERTY 101 (Edward Alexander ed. 1999). Mill states this example as follows:

> An opinion that corn-dealers are starvers of the poor, or that private property is robbery, ought to be unmolested when simply circulated through the press, but may justly incur punishment when delivered orally to an excited mob assembled before the house of a corn-dealer, or when handed about among the same mob in the form of a placard.

Id. at 101.

circumstances in which copying was likely to occur presented no risk whatsoever that the pirates' will would be overborne.[290] As the cost of using content will tend systematically to favor regulation of code, the time for deliberation will tend systematically to cut against regulation.

3. *Intent*

Brandenburg made the speaker's intention a key fact in incitement cases by holding that expression may not be restrained or made the basis of liability unless it is "directed to" inciting immediate lawlessness.[291] Two intent-related issues are relevant here. The first is the need to assess even intended harm in light of First Amendment values. Some harms, such as harm to reputation from defamatory statements made with actual malice, may be the basis for liability even when made within public discourse.[292] Other harms, such as offense, may not be the basis for liability even if they are intended.[293]

As the quotation from *Brandenburg* implies, a speaker who intends expression to spark illegality may be held liable if the illegality is tied closely

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[290] Indeed, Judge Kaplan implicitly cast the pirates as rational actors—not persons whose reason had been suspended by circumstance. Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 331 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001).

[291] Brandenburg v. Ohio, 395 U.S. 444, 447 (1969). For an extended discussion of this point in a context where the defendant stipulated, for purposes of summary judgment, to the requisite intent, see Rice v. Paladin Enters., Inc., 128 F.3d 233 (4th Cir. 1997). This problem is relevant to statutory interpretation as well as constitutional analysis. The Court has often held that a statute that might be read to criminalize protected expression is constitutional because conviction requires proof that the defendant intended to commit the offense in question. *E.g.*, United States v. Aguilar, 515 U.S. 593, 605–06 (1995); *Rice*, 128 F.3d at 247–48. The DMCA, which criminalizes trafficking only when done willfully and for gain, is an example here. *See supra* note 43. And, as Judge Kaplan rightly noted, intention is also relevant to the question whether a speaker is "trafficking" in the first place. *See supra* note 210.

[292] *E.g.*, Milkovich v. Lorain Journal Co., 497 U.S. 1 (1990) (reviewing constitutional limitations on defamation claims); New York Times Co. v. Sullivan, 376 U.S. 254 (1964) (creating actual malice requirement).

[293] Hustler Magazine v. Falwell, 485 U.S. 46, 53 (1988); Garrison v. Louisiana, 379 U.S. 64, 72–74 (1964). Larry Flynt wanted to traumatize and discredit Jerry Falwell, but this admitted intention did not save Falwell's emotional distress claim. The Court reasoned that holding speakers liable for distress would limit public debate too much, and it was willing to say that exposure to some amount of ridicule is the price society exacts from public figures. *Falwell*, 485 U.S. at 51.

enough to the expression.[294] In theory, this means the intention of a director who secretly hoped a violent film would prompt copy-cat killers would be relevant to a civil suit by a victim of such a killer.[295] In practice, however, absent the stipulation of intention so important to liability in *Rice v. Paladin Enterprises, Inc.*,[296] it is hard to see how a plaintiff could ever prove such an intention with regard to widely distributed works presented in contexts suggesting deliberation.

This point raises the second intent-related issue. If the content of code seems ambiguous because it costs little to employ it for purposes other than deliberation, then a fact-finder will have to rely more heavily on contextual factors other than content to draw inferences about a speaker's intention. The social fluidity of the Internet complicates this aspect of incitement analysis. Where social conventions are unstable, speakers employing them send weaker signals to audience members and fact-finders alike. Perhaps more importantly, in cases where code may be used unlawfully at low cost, the high probability of misuse will affect a judge's view of the defendant's intention. That is particularly true for cases in which a fact-finder believes the dominant use of code is for illegal purposes rather than for deliberation.

Corley is a good example of these points. As we have seen, there was evidence supporting Corley's claims to be engaged in journalism. But there was also evidence suggesting it was very likely that some people (other than plaintiffs' experts) would use DeCSS (from Corley's site or elsewhere) to steal movies. For his part, Corley claimed to be indifferent to how his stories were used.[297]

If we accept all these facts, how should a court deal with the intention aspect of incitement doctrine in Corley's case? Should it give a jury a specific intent instruction and then wash its hands of the case? Corley may have acted with reckless disregard of the consequences of his story, but that is not the same thing as a deliberate intent to spark illegality. Or, because any

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[294] At least after *Falwell*, *Brandenburg*'s statement that a state may regulate "advocacy of the use of force or of law violation except where such advocacy is directed to inciting or producing imminent lawless action and is likely to incite or produce such action" should be qualified by the requirement that the lawless action in question must itself be constitutionally punishable, as with defamation, and not enjoy constitutional immunity, as with offense. *See Brandenburg*, 395 U.S. at 447.

[295] Byers v. Edmonson, 712 So. 2d 681, 690 (La. 1998) (allowing plaintiffs to proceed on claim alleging that producers of the movie *Natural Born Killers* intended it to incite mass murder).

[296] Rice v. Paladin Enters., Inc., 128 F.3d 233 (4th Cir. 1997).

[297] There is some evidence suggesting DeCSS probably would be used to steal movies. *See supra* note 207. Corley, however, seems indifferent. *See supra* notes 153, 224.

harm is the result of the deliberate acts of audience members rather than the speaker, should the court hold, as a matter of law, that plausible evidence of an intention to engage in public discourse establishes that the *Brandenburg* standard is not met?

Each option has its disadvantages. The first could create liability for speakers who intended to contribute to public discourse but who acted in circumstances congenial to illegal acts, giving judicial approval to a type of heckler's veto. The second option could immunize speakers who masked their intention in a plausible but insubstantial pretext. Because unlawful uses occur at the leisure of listeners whose will is not overborne, I favor the second option as a way of ensuring that weakened social cues and heightened risks of unlawful use do not overwhelm speakers who seek to contribute to public discourse.[298]

C. *Why Expressive Uses of Code Should Be Analyzed as Incitement and Receive Constitutional Protection Where User Illegality Is Deliberate*

The analysis in the preceding sections poses the question of how courts should deal with expressive conduct that advances First Amendment values but which also presents a high probability of imminent and substantial but deliberative harm. One could make a good argument that this combination of factors would satisfy the *Brandenburg* standard in many and perhaps most cases. This is particularly true if one takes into account the magnitude of harm and loosens the immediacy requirement somewhat for cases where probability and magnitude are both very high, as I believe it makes sense to do, and if risk aversion causes judges to focus more on expected costs than benefits, as I believe it probably does.

Nevertheless, courts should give greater weight to the deliberative aspect of the harm than to the risk that it will be immediate. Regarding magnitude, where expressive uses of code advance First Amendment values, courts should presume that the magnitude of the harm does not outweigh that contribution unless a party demonstrates the contrary through compelling evidence leaving virtually no room for doubt. As a practical matter, applying this standard would yield few, if any, cases in which code used as part of public discourse may be suppressed. Successful incitement cases would be as

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[298] This includes appellate courts exercising *de novo* review. Boy Scouts of Am. v. Dale, 530 U.S. 640, 648–49 (2000) (noting plenary appellate review of facts in First Amendment cases); Bose Corp. v. Consumers Union of United States, Inc., 466 U.S. 485, 499 (1984) (holding same).

rare as they are now, which is not to say they are impossible to bring.[299]

Under this standard, Jansson and Skala's essay and illustrative programs and Corley's posting of DeCSS in connection with his story would be protected by the First Amendment. I believe this approach is justified even though the lack of social friction on the Internet means the risk and magnitude of certain kinds of harm have grown substantially. I here offer six reasons for this view.

My first reason is normative. The expected harm in cases such as *Corley* is the deliberate act of readers who choose to employ for unlawful ends content presented through expressive practices that advance free speech values and thereby presumably enrich society. The acts of the readers are blameworthy, and the act of the speaker is not.

I admit that to say the speaker is not blameworthy ignores his knowledge of what may be a high risk that the speech will be misused. To that extent, this is a formal statement that speakers should be entitled to rely on listeners to obey the law even if the speaker urges them to break it or makes it easier for them to break it. This reason might not carry much weight as a practical matter, but it carries some. After all, rights holders may sue actual infringers, as the recorded music industry is doing as this article goes to press.[300]

The second reason extends the first. Shifting responsibility for obeying the law from speakers to listeners has, until now, been better for society than the opposite approach. Doctrines that allowed speakers to be held liable could justify the jailing of a man who ran four times for president, and polled almost a million votes from prison, for giving a speech whose "main theme . . . was socialism, its growth, and a prophecy of its ultimate success."[301] Doctrines placing the burden on listeners allowed a wider variety of views to be aired and played an important part in the civil rights movement of the 1960s.[302]

In a heterogenous society, public discourse plays an important role in reconciling the interests and demands of a wide variety of communities, and it is better able to serve that role if the burden of obeying the law rests with

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[299] *See* People v. Upshaw, 741 N.Y.S.2d 664, 669 (N.Y. Crim. Ct. 2002) (denying motion to dismiss criminal information in case against street-corner speakers in New York who celebrated terrorist attacks on New York shortly after the attacks).

[300] Bruce Orwall, et al., *supra* note 128.

[301] Debs v. United States, 249 U.S. 211, 212 (1919). To be fair to Justice Holmes, he said the Court had nothing to do with that part of the speech and cared only if "a part or the manifest intent of the more general utterances was to encourage those present to obstruct the recruiting service," in which case Debs might be guilty if his encouragement was direct enough. *Id.* at 212–13.

[302] *E.g.*, Gregory v. Chicago, 394 U.S. 111 (1969); *see* KALVEN, *supra* note 204, ch. 7.

listeners rather than speakers. Conflicts over code will not have the same broad social salience as conflicts over civil rights, but much of the debate over regulation of code and the Internet is in fact a debate over conflicts between commercial and research cultures. Given the increasing importance of technology to society, reconciling such conflicts is very important. Providing legal space for expression that advances learning and public dialogue on technological issues is an important part of the reconciliation process.

Third, the harm in most code cases will be economic, not physical. I do not mean to dismiss economic harm as irrelevant, which it certainly is not. Many rational people would trade some degree of physical harm for wealth (call them athletes), and I do not consider it at all obvious that penury is better than injury. On the other hand, if for no better reason than socialization in the prevailing culture, one worries about physical violence in a different way than Jansson and Skala's illustrative programs, and it is rational to take that difference into account. The law sometimes distinguishes between physical and economic harm,[303] and the distinction provides some social basis for discounting the magnitude of purely economic harm more than physical injury. (Where code might threaten physical injury, of course, this reason would not apply.)

An important qualification to this argument is that copyright law works from the premise that people and firms need economic incentives to produce expression.[304] If protecting speech involving code causes serious economic harm to rights-holders, that protection might itself harm public discourse. There are speech interests on both sides of this question. Like the first argument, therefore, this one might or might not carry much practical weight. It will depend on one's beliefs about the intellectual property system as a whole.

Fourth, because we do not know whether the existing intellectual property rights structure is optimal,[305] it is not clear how far piracy implies harm to social welfare. Some harm is very likely. Firms producing expression presumably do so only to the extent the present value of investments in a project exceeds the present costs. (That is, when the net

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[303] For example, sales law allows firms to limit remedies for economic harm but presumes that such limitations are unconscionable as applied to physical injury caused by goods. U.C.C. § 2-719(3) (2003).

[304] *E.g.*, Harper & Row, Publishers Inc. v. Nation Enters., 471 U.S. 539, 558 (1985) (quoting Mazer v. Stein, 347 U.S. 201, 209 (1954)).

[305] On our knowledge of the relationship between IP rights and innovation, see David McGowan, *Innovation, Uncertainty, and Stability in Antitrust Law*, 16 BERKELEY TECH. L.J. 729 (2001).

present value is positive.) Piracy increases the risk associated with returns on investment in expression, thus reducing their present value, presumably reducing output of expressive works relative to a world with less piracy risk.[306] If readers use expressive behavior involving code to steal IP, then an increase in the discount rate for investment in expressive works would be a real and possibly significant cost to protecting such expression. The district court in *Corley* was very concerned about this point, and it was right to be concerned.[307]

Though some harm is likely, it is not clear that any particular level of piracy implies a net harm to society rather than simply a transfer of wealth

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[306] This is one way to measure the cost of protecting free speech. Suppose that protecting Corley's story increases the risk movie studios face from piracy. (There are reasons to think the story might not affect the discount rate, which I discuss in a moment, but for now suppose it does.) Suppose a studio is deciding whether to make a movie. A rational actor assumption implies that the decision will be based on the net present value (NPV) of the project. NPV is given by adding to the initial cost (I) the expected cash flow, discounted to account for risk and the time over which the cash will be received, which is given by $1/(1+r)t$ where r is the appropriate discount rate and t is the time period over which revenues are expected. (For a brief and lucid explanation of this logic, see Professor Varian's declaration in Eldred v. Reno. Aff. of Hal R. Varian, Eldred v. Reno, 74 F. Supp. 2d 1 (No. 1:99CV00065JLG) (D.D.C. 1999), *available at* http://eon.law.harvard.edu/openlaw/eldredvashcroft/cyber/varian.pdf (last visited Oct. 10, 2003).)

For simplicity, assume the studio expects the movie to generate $100, the discount rate without free speech protection is 14%, the rate with free speech protection is 16%, and the time horizon is 1 year. NPV without free speech protection is $100/1.14 = $87.72. NPV with free speech protection is $100/1.16 = $86.21. If the projected revenue is $100 million, the difference is $1,512,401.69 which, on the assumptions stated here, is the per-project cost of First Amendment protection. This analysis also shows that an increase in the discount rate can reduce production of expressive work. In this hypothetical, if the initial investment required to make a movie is $87 million, then it is profitable and, on a rational actor assumption, will be made. With free speech protection, the movie is not profitable and will not be made. In that case, protecting Corley's story would have displaced other expression.

A couple of qualifications are appropriate here. It is very hard to attribute causation to expression, which means my assumption that protecting the story changes the discount rate is very strong. And acknowledging the cost of protection does not imply that the cost is not justified by the benefits of the rule. My argument in the text is that the reasons to hazard the risk of such costs are stronger than the reasons for letting them limit free speech protection. The examples in this note show only two things. The first is that there are analytical tools that may be used to explore the cost of free speech protection in such cases. The second is that there are real costs to protecting speech; at one level, First Amendment doctrine is a bet that those costs are worth incurring.

[307] Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 313–15 (S.D.N.Y. 2000), *aff'd*, Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001).

from rights-holders to pirates. If piracy increases the discount rate only slightly, or if media firms are flush with projects whose net present value is very large, then free speech protection might cost very little.[308] The benefits of Corley's story, and any follow-on work it prompts, reduce these losses and may offset them entirely. It is even conceivable that gains through decreased costs of inputs would exceed losses from reduced incentives.[309] Both the costs and benefits to the rule have to be generalized throughout the range of cases, which means economic losses to media firms may or may not wash out in the form of a reduction in the cost of inputs used for future expressive endeavors.[310]

Unfortunately, there is no way of knowing how this analysis nets out over cases and time in the real world, so there is no way to know for sure whether society is better off with strong protection of code used in public discourse, and a relatively high risk to movie studios, or whether it is better off the other way around. There are speech interests on both sides of the equation. (The Supreme Court faced a form of this dilemma in *Bartnicki v. Vopper*,[311] and it was right to take a cautious approach to a case in which both sides asserted plausible expressive interests.)

Because we know so little about the relationship between intellectual property rights and innovation, we should be careful how we weigh the risk of piracy. There has always been piracy, and there always will be. Its effects are more ambiguous than they might seem. There is a good pragmatic argument that laws like the DMCA can at best keep honest people honest, and throw a scare into the crooks. Piracy is not going to be stopped altogether, and it is unwise to sacrifice too much in the way of public discourse to pursue an unreachable goal. That is the principal reason I believe

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[308] I doubt that media firms have only sure-fire projects, however, so if Corley's story will result in some increase in risk, then we should assume it will cause some corresponding reduction in the production of creative works. It might be possible for the movie studios to pass the increased risk along to consumers in the form of higher ticket and rental prices. One would have to study the relevant elasticities and cross-elasticities of demand to make an educated guess on this point.

[309] Yochai Benkler has made this point well. *See* Yochai Benkler, *An Unhurried View of Private Ordering in Information Transactions*, 53 VAND. L. REV. 2063, 2069 (2000).

[310] One reason to believe they would not wash out, and that protection has an actual cost in both economic losses to rights holders and a reduction in the output of creative works, is that not all pirates are transformative users (most probably are not) while most rights-holders are. (Heirs and assignees might be exceptions.) In other words, piracy tends to transfer wealth away from persons and firms likely to invest it in future creative work and into the hands of persons who will not.

[311] 532 U.S. 514, 533 (2001).

we should not shift the burden of obeying the law from listeners to speakers in order to combat deliberate theft unless and until a compelling factual basis justifies such a change. (As a final thought on this troublesome point, I have an instinctive aversion to the idea that we must truncate discourse to save it.)

Fifth, in some cases it will be very hard to establish that expression causes a particular harm. In cases where code originates with a speaker whose expression advances First Amendment values, as with Bernstein and Jansson and Skala, conventional theories of causation and deterrence operate fairly well. In cases such as *Corley*, however, where the code used in public discourse originates somewhere else, causation is a very large problem.

The plaintiffs in *Corley* had no evidence that anyone other than their experts used Corley's posting to steal movies.[312] Indeed, they stipulated that they had no evidence that anyone other than their experts had used DeCSS from any source to steal movies.[313] Not surprisingly, the evidence offered no reason to believe that forcing Corley to remove DeCSS shut down an active source of piracy, and it certainly did not remove DeCSS from the Internet. As of this writing, it takes a computer-illiterate law professor about ten minutes to find and download the program, dawdling at various sites on the way. It is hard to believe the injunction against Corley had any effect at all on the use of DeCSS, as I believe there probably is, to steal movies.

The district court was admirably candid in admitting that enjoining Corley would not remove DeCSS from the Internet, which meant that its injunction did not remedy the harms identified in the opinion.[314] This fact bothered Judge Kaplan, but he enjoined Corley anyway because he thought that accepting the futility argument would "create all the wrong incentives by allowing defendants to continue violating the DMCA simply because others, many doubtless at defendants' urging, are doing so as well."[315] He also thought the injunction would send a message that stealing intellectual property was against the law and would be punished where possible.[316]

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[312] *Reimerdes*, 111 F. Supp. 2d at 314.

[313] *Id.* at 314–15.

[314] *Id.* at 343.

[315] *Id.* at 344.

[316] In his words:

> [T]he likelihood is that this decision will serve notice on others that "the strong right arm of equity" may be brought to bear against them absent a change in their conduct and thus contribute to a climate of appropriate respect for intellectual property rights in an age in which the excitement of ready access to untold quantities of information has blurred in some minds the fact that taking what is not yours and not freely offered to you is stealing.

Id. at 345.

Neither argument is relevant to the merits of Corley's First Amendment claim, and the use of injunctions as a form of counter-speech is highly problematic. Doubts about causation mean that the expected benefit from regulating speech may be very low—so low that in at least some cases they may not justify even modest costs to public discourse.

Sixth, because judges are generally not technologists, there is a risk that they will underestimate the degree to which code may contribute to public discourse. That is to say, they will underestimate the benefits to at least the potential audience for works using code because they are not part of the immediate audience. This is different from the traditional worry about judicial regulation, which is that judges would understand expression very well and enjoin it because they disagreed with it, but it is a factor suggesting the need for rigorous policing of the boundaries of public discourse.

D. *Why Courts Should Not Put Too Much Weight on Content Neutrality in Cases Involving Expressive Uses of Code*

Content neutrality is a shorthand doctrine the Court uses to express First Amendment values and concerns. To answer questions in free-speech cases it is far more important to analyze the relationship between a regulation and First Amendment values than to focus on content neutrality. That is why the Court strikes down some restrictions that are not based on content,[317] and upholds some restrictions that are.[318]

Content-neutrality analysis sounds very formal but is in fact strongly influenced by normative considerations based in the First Amendment values the doctrine is employed to protect. That is why there are so many disputes about what is nominally a relatively simple inquiry.[319] Because neutrality

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One can sympathize with Judge Kaplan's frustration that the low costs of social interaction on the Internet took the teeth out of his injunction. Normatively it is as problematic to relieve speakers from liability on the ground that other people are breaking the law as it is to hold them liable on that ground. And he was right to worry that increasing numbers of people seem to believe that stealing intellectual property is legal because it is easy. One might even sympathize with his desire to send them a message, but only if he was right to conclude that Corley's story was not part of public discourse. In that he was wrong. At the end of the day, the court suppressed a contribution to public discourse to issue an order the only practical effect of which was to send a contrary message. Not good.

[317] *E.g.*, Bartnicki v. Vopper, 532 U.S. 514, 535 (2001).

[318] *E.g.*, City of Erie v. Pap's A.M., 529 U.S. 277, 302 (2000); Renton v. Playtime Theatres, Inc., 475 U.S. 41, 47–55 (1986).

[319] For a succinct account of the relevant issues relating to content-neutrality analysis, see the discussion of Daniel Farber. DANIEL A. FARBER, THE FIRST

analysis is a tool to protect First Amendment values, it must pay attention to the way in which expression is used which, a moment's reflection will confirm, requires taking at least a quick look at content and the meaning suggested by the social facts in which it is expressed. As the tax-advice cases show, courts freely analyze content to decide whether speech is protected—and therefore subject to neutrality analysis—in the first place.[320]

The most prominent harms the doctrine tries to identify are censorial governmental motives and the risk that a regulation will harm public discourse.[321] Taking these concerns as the baseline, laws regulating code might seem to present a hard case for the neutrality doctrine. As a general matter, one could say that all regulations of code are based on content because they would either admit to being based on content or would be justified as a regulation of the code's function. Because functionality of executable code is determined by the expression of higher-level code, the argument would say, to regulate function is to regulate expression. If Sklyarov's code had encrypted eBooks, in other words, no one would have bothered him, but because he wrote decryption algorithms, he got indicted.[322] This point is at least consistent with Judge Kaplan's view of code as comprising a continuum of expressiveness.[323]

Against this one might argue that a function can be expressed in different ways.[324] In regulating trafficking in circumvention devices, the DMCA is indifferent to the aspects of code that make it expressive. It does not care what language the circumvention measure is written in, whether the coding is elegant or crude, whether it follows the Elements of Programming Style, or the like. Indeed, the DMCA does not care in particular about software. It cares only about circumvention, and does not distinguish among software,

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AMENDMENT 21–38 (1998).

[320] *E.g.*, United States v. Freeman, 761 F.2d 549 (9th Cir. 1985); United States v. Dahlstrom, 713 F.2d 1423 (9th Cir. 1983); United States v. Buttorff, 572 F.2d 619 (8th Cir. 1978). Justice Stevens was right to say "[w]e have never held, or suggested, that it is improper to look at the content of an oral or written statement in order to determine whether a rule of law applies to a course of conduct." Hill v. Colorado, 530 U.S. 703, 721 (2000).

[321] *See, e.g.*, Stone, *supra* note 38, at 54. Professor Stone adds "communicative impact" to his list, by which he means to identify government regulations justified by a fear that expression will affect persons in some way.

[322] United States v. Elcom Ltd., 203 F. Supp. 2d 1111, 1127–29 (N.D. Cal. 2002) (concluding DMCA is a content-neutral regulation of speech).

[323] *See supra* note 20.

[324] Samuelson et al., *supra* note 65, at 2315–16 ("[P]rogram text and behavior are independent in the sense that a functionally indistinguishable imitation can be written by a programmer who has never seen the text of the original program.").

programmable computer chips, skeleton keys, burglar tools, wrenches or baseball bats.[325] Software that does not effectively circumvent a technological measure is not subject to the statute, no matter how hard it tries or how much one might learn about decryption by studying it. On this reading, not only would the DMCA be content-neutral,[326] its prohibition on trafficking arguably should not be subjected to First Amendment scrutiny at all.[327]

Probably many regulations of code will be content-neutral as written. Indeed, the content-neutrality analysis in both *Elcom* and *Corley* was correct, as far as it went. The judges in both cases were right to say Congress was indifferent to the ideas circumvention technology might express.[328] Congress wanted to stop piracy, and it gave media firms and prosecutors a big stick to do it. There is nothing inherently wrong with that.

The problem is that the analysis in each case was divorced from expressive contexts and practices and, therefore, from free speech values. *Elcom* involved code distributed in circumstances so far removed from recognizable expressive conventions that its only First Amendment connection—and a remote one at that—was as an input to reading. In that respect it deserved as much scrutiny as would be given to regulations of reading lamps, printers, or projectors, but no more.[329] By contrast, the code in *Corley* illustrated points made in a plausibly journalistic context that the court should have treated as within the realm of public discourse.

The cases are very different, but they received the same treatment. The court in each case rightly concluded that the DMCA itself is content neutral and then, reciting and mechanically applying the verbal formula laid down in

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[325] And what can be done with software can be done with hardware. *Id.* at 2316 ("The engineering designs embodied in programs could as easily be implemented in hardware as in software, and the user would be unable to distinguish between the two.").

[326] *See* Benkler, *supra* note 179, at 446 (describing DMCA as content-neutral law).

[327] Arcara v. Cloud Books, Inc., 478 U.S. 697, 707 (1986) (ordering the closing of a bookstore where prostitution and other sexual activity occurred under an anti-bordello statute did not require First Amendment review). My thanks to Lee Tien for suggesting the relevance of *Arcara*.

[328] United States v. Elcom Ltd., 203 F. Supp. 2d 1111, 1127–29 (N.D. Cal. 2002) (concluding DMCA is a content-neutral regulation of speech); Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 327–29 (S.D.N.Y. 2000). The Second Circuit concurred. Universal City Studios, Inc. v. Corley, 273 F.3d 429, 453–55 (2d Cir. 2001).

[329] *See* Post, *Code*, *supra* note 1, at 720. It is not clear which way AEBPR's status as a tool should cut. Adobe's eBook Reader was a reading tool, too, and a court could quite plausibly say the First Amendment condemned AEBPR on the ground that it impaired safe distribution and use of the first tool. There are speech interests on the publisher's side of the case, as well as on the user's side.

Turner Broadcasting,[330] each concluded that the statute serves a compelling governmental interest and restricts no more speech than is essential to serve that interest.[331]

That the courts in such different cases were able to apply the same test and reach the same result suggests two important points. First, the *Turner* test conceals more about free speech interests than it expresses.[332] *Turner* was largely irrelevant to *Elcom* and inadequate for *Corley*. Second, the lack of social friction on the Internet blinded the courts in *Reimerdes* and *Corley* to the social meaning of Corley's use of DeCSS. Because code is so easy to distribute among very different expressive contexts, the courts focused on how DeCSS might be used rather than on how Corley used it. Regulating expression at the level of its most harmful possible use, regardless of a particular speaker's use and regardless of context, is at odds with First Amendment values and doctrine. If followed in the future, that approach could undercut the protection of digital expression, causing harm to values the First Amendment exists to uphold.

Part of the problem is that content neutrality is both an unduly alarming and deceptively lulling idea. It is unduly alarming because regulations of content are both common and acceptable; vast areas of the law from contracts to securities regulation could not operate otherwise.[333] It is deceptively lulling because when applying the *Turner* test courts are to be less skeptical of government regulations of expression than when they analyze content-based laws. More fundamentally, however, nothing in the *Turner* test tells judges what expressive practices count when asking whether a regulation suppresses more expression than is necessary. Nothing in *Turner* told Judge Whyte to discount Sklyarov's free speech claim as insubstantial.[334] Nothing in *Turner* told Judge Kaplan to take seriously Corley's claim to be reporting on a story.

Content-neutral regulations may violate the First Amendment when they

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[330] Turner Broad. Sys., Inc. v. FCC, 512 U.S. 622, 680 (1994).

[331] *Elcom*, 203 F. Supp. 2d at 1129–32; *Reimerdes*, 111 F. Supp. 2d at 330.

[332] These cases illustrate professor Post's point that First Amendment doctrine is disconnected from First Amendment values, and therefore cannot accurately predict or determine results. Post, *Recuperating*, *supra* note 29, at 1249 ("[C]ontemporary First Amendment doctrine is nevertheless striking chiefly for its superficiality, its internal incoherence, [and] its distressing failure to facilitate constructive judicial engagement with significant contemporary social issues connected with freedom of speech.").

[333] *See supra* text accompanying notes 27–32, 317.

[334] I here refer only to Sklyarov's own claim, and not to his overbreadth argument, which the court rightly rejected in favor of more case-specific analysis.

harm public discourse.[335] The anti-trafficking regulations of the DMCA had that effect when applied to Corley's story, and would have had that effect if they had been applied to Jansson and Skala's essay and illustrative programs. When code is regulated in such circumstances, First Amendment values are placed at risk, and the case for rigorous application of the rule voiding content-neutral regulations that truncate public discourse is quite strong.

V. CONCLUSION

There is no serious question that code may be used expressively in ways that advance First Amendment values. When it is, it deserves First Amendment protection. There is also no serious question that, because social friction on the Internet is very low, the probability that code may cause significant harm is high. These facts present hard choices, made harder by the mercurial social context of the Internet, which weakens and blurs social conventions and practices judges must consult to reach sensible decisions.

Judges must find ways to manage such mercurial conventions and practices without sacrificing First Amendment values. They must be open to unconventional expressive practices, such as cryptographic essays posted by individuals claiming no affiliation to expressive institutions such as universities, or news stories posted by individuals whose editorial standards and practices would not be accepted by traditional media firms.

Under ordinary incitement principles, risk aversion plus the high risk of widespread unlawful activity might justify many if not most regulations of expression involving code. At least in the cases we have seen to date, however, the harm at issue has been deliberative. It has been caused by recipients of code who may decide at their leisure how to use it. In addition, though the immediate audience for code in any particular case may be small, the potential audience may be large, and the social benefits of such expression may be high. For these reasons, courts should not employ incitement doctrine to regulate code used to advance public discourse unless a compelling factual record is presented to justify shifting responsibility for obeying the law from listeners to speakers.

More generally, the example of expressive uses of code shows how much free speech doctrine depends on social meaning, which is derived from social practices and contexts, and how much these in turn depend on social friction to distinguish and stabilize themselves. It is odd to think of costs as playing a positive role in society, but that is what social friction does here. Without social friction, and the coherence of expectations, understandings, and

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[335] *See, e.g.*, Bartnicki v. Vopper, 532 U.S. 514, 526–27 (2001); Schneider v. State, 308 U.S. 147, 161 (1939); Stone, *supra* note 38, at 58.

meaning it helps sustain, free speech analysis would be unstable—perhaps unthinkable.

The intriguing need of judges to create social friction where it is lacking, and to borrow from the physical world contextual cues they need to deal with free speech cases involving code, suggests there is a limit to at least the rate at which cyberspace may constitute itself as a social sphere distinct from the physical world. There probably is a limit on the degree to which it can do so. Reports that the Internet is a brave new world, or even " 'a unique and wholly new medium of worldwide human communication,' "[336] are greatly exaggerated.

But then that would seem to be the lesson. Insofar as the law is concerned, things like code, and speech, and the Internet, are what we make them, and make of them. They have to be treated that way. To imagine that they are something on their own is to miss the points at which law and society connect, and thus to err.

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[336] Reno v. ACLU, 521 U.S. 844, 850 (1997) (quoting ACLU v. Reno, 929 F. Supp. 824, 844 (E.D. Pa. 1996).

APPENDIX
OBJECTIONS AND RESPONSES

There are many possible objections to the approach I advocate. I briefly consider a few of them here.

A. *Will protecting stories like Corley's cause pirates to append a bit of commentary to their circumvention code as a pretext to place it within public discourse, as purveyors of obscenity might do to avoid obscenity prosecutions?*

Probably. I do not see this as a conclusive objection however. First, if the commentary advances First Amendment values, that is an independent reason to protect it. If not, then the tactic will probably fail, and the person distributing the code will have no First Amendment defense. Line-drawing problems exist, it is true, but that is not unique to code, as the tax-advice and threat cases show.[337] Because expression is part of virtually every social practice,[338] any legal protection of free speech will have to distinguish practices that advance values the First Amendment protects from those that do not. Though not perfect, this context-based approach is far superior to flat assertions that code can never be protected expression. Bernstein's academic work, Jansson and Skala's essay, and Corley's story—which made serious and valuable points—prove at least that much.

B. *Will protecting a story like Corley's result in the widespread distribution and use of circumvention tools as such, with no pretense of advancing public discourse?*

Almost certainly. Because code is malleable and may be distributed cheaply, there is a serious risk that code posted as part of public discourse will be taken from that context and distributed as nothing more than a tool to break the law. There is a further risk that such distribution will affect how people view code when encountering it in a context that otherwise offers it as a subject for deliberation. If people are already disposed to see DeCSS as a tool to break the law, in other words, they might seize on it as a tool for that purpose regardless of the expressive context in which it was posted. These are real problems, and they mean the cost of protecting code may be higher than the cost of protecting other expression that might lead to unlawful acts,

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337 *See supra* notes 184 (tax advice cases) and 84 (threat cases).

338 *See* Post, *Reconciling*, *supra* note 81, at 2366.

such as in traditional incitement cases. And if readers are acclimated to ignore expressive context, the benefits to expression involving code might be lessened.

Nevertheless, though it is true that readers may use expression that advances First Amendment values in ways that do not, it does not follow that constitutional protection should be denied to speakers in the first instance. For the reasons stated in Part III(B), where expression involving code contributes to public discourse, I do not believe these risks justify altering existing doctrine to hold speakers liable for the deliberative unlawful acts of readers. It would be a significant alteration of existing doctrine if deliberate choices to use expression unlawfully were considered a basis for regulating speech. At a minimum, experience suggests the burden should be on those who wish to shift liability back to speakers to justify that choice.

C. *Even if there is an immediate audience for technical discourse, members of that audience can learn what they need to know from something less than a fully functional program. The problems you discuss could be solved if the law requires speakers to disable illustrative code, or post it on a password-protected site so distribution could be monitored.*

I find the first idea the hardest objection of all. It basically posits that most of what can be learned from a given program can be learned from something less than a fully executable program such as DeCSS. I am not technically qualified to say one way or the other whether this is right. Even if it is, however, I would hesitate to require speakers to disable the code or impede its execution. Though such a requirement would be logical, because such steps would increase the cost of using code unlawfully and therefore presumably diminish unlawful use, no one would benefit from protracted litigation over the composition of code. Litigation involving public discourse could turn into a repeat of the Microsoft antitrust litigation, and it is hard to see how that would produce doctrine that expressed First Amendment values very well.

Judge Williams was right to say, in his opinion in the contempt proceeding against Microsoft, that judges should stay out of the business of designing code.[339] For the reasons I have given, at least as a default matter the same principle applies here. In the event that protecting code used to further public discourse turns out to wreak havoc on the system of expression as a whole, however, I would prefer such a requirement to the *Corley*

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[339] United States v. Microsoft Corp., 147 F.3d 935, 949–50 (D.C. Cir. 1998).

approach of refusing to acknowledge that code may contribute to public discourse.

Password protection, as in *Bernstein*, creates significant free speech issues, including, at a minimum, forcing readers to identify themselves,[340] and possibly barring large numbers of persons from reading public discourse involving code. If only certain persons were to be allowed to access the code, access criteria would have to be established and policed. This system would be better than a flat prohibition on publication, but that is about all one can say for it.

D. *The First Amendment needs bright-line rules so speakers aren't deterred by litigation risk, and it is unrealistic to expect busy generalists like district court judges to draw distinctions as fine as you demand with respect to Jansson and Skala.*

The First Amendment is sometimes described as a domain of bright-line rules,[341] but that impression can only be sustained by looking within the scope of protected speech, and even then only at a few doctrines.[342] Because expression meaningful to the law is produced by social practices, conventions, and understandings, the domain of a free-speech principle cannot be established apart from these factors, which means it cannot be established through abstract bright-line rules. Even contextual rules will present so many issues there will be little point in calling them bright lines. The values that justify the scope of the domain of protected speech lie behind the rules within it. Focusing on the rules instead of the values leads to error.

It is true that the malleability of code and social fluidity of the Internet make analysis of expressive practices on the Internet more difficult than analysis of expression in conventional physical settings. Nevertheless, sensible free speech doctrine must attend to the relationship between First Amendment values and expressive social practices and conventions. That is no less true of the Internet than any other setting. Though I disagree with it in part, Judge Kaplan's detailed and thoughtful analysis of the linking in *Corley* provides reason for optimism on this score.

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[340] *Cf.* Tattered Cover, Inc. v. City of Thornton, 44 P.3d 1044, 1052–53 (Colo. 2002) (recognizing state and federal constitutional rights to anonymity in purchasing and reading books); Julie E. Cohen, *A Right to Read Anonymously: A Closer Look at "Copyright Management" in Cyberspace*, 28 CONN. L. REV. 981 (1996).

[341] *See, e.g.*, Lemley & Volokh, *supra* note 62, at 203–04.

[342] It is more accurate to describe First Amendment doctrine, as Professor Post does, as a "vast Sargasso Sea of drifting and entangled values, theories, rules, exceptions, predilections." CONSTITUTIONAL DOMAINS, *supra* note 24, at 297–98.

E. *Publication of CPhack and DeCSS shows that publishing code can be a politically subversive act. It follows that publishing code in a context rendering publication recognizable as an act of subversion deserves free speech protection.*

On the first point, the analysis in Part I suggests that in the right circumstances publishing code can be recognizable as a political act designed to make an impression, which is to say an act designed to communicate something. Publication of both CPHack and DeCSS may be interpreted fairly as an assertion that hackers have a right to hack technology, or at least that it is fruitless to try to stop them, and as an assertion that existing legal protections of both content and encryption technology are oppressive. In a broader sense, publication is an assertion that knowledge cannot be controlled by firms but will be and should be controlled in a decentralized (some would say more democratic) manner.

This analysis does not imply constitutional protection, however. The argument that it should takes essentially this form:

> *Acts of political subversion recognizable as such are protected by the First Amendment. Publishing CPHack and DeCSS were acts of political subversion recognizable as such. Therefore publication of CPHack and DeCSS was protected by the First Amendment.*

This argument is not sound because the first premise is much too broad. Political assassination, picket-line violence, and countless other acts can, in the right circumstances, amount to recognizable acts of political subversion. The Constitution does not forbid regulation of such acts, however, because society's commitment to free expression does not trump all other values. In these examples, the value of safety from violence, as expressed in the crimes of murder, battery, etc., will trump the expressive value of the acts because society at present concludes that the costs of protecting such acts do not justify whatever expressive gains such protection might yield.

The unsoundness of this argument does not mean that publishing code can never be protected speech. It means only that protection is not implied by the quite correct assertion that publishing code may be a politically subversive act.

F. *The various presentations of DeCSS—on clothing, in songs, and in other media—show that any distinction between code in digital form and code in other forms is incoherent.*

This claim is simply wrong. The malleability of code and the ease of transforming at least short programs from printed to digital form may mean that, in some cases, the distinction does little analytical work. The distinction

between DeCSS posted on Corley's web site and DeCSS printed on a tie is not incoherent, however, because the costs of employing the code are different in the two cases and because the social conventions and practices relevant to web sites differ from those relevant to garments and other media.